

**2001 ACCESSORIES/SAFETY EQUIPMENT****General Motors Corp. - Air Bag Restraint Systems****DESCRIPTION & OPERATION**

**WARNING:** Accidental air bag deployment is possible. Personal injury may result. Read and follow all **WARNINGS** and **AIR BAG SAFETY PRECAUTIONS** before working on air bag system or related components.

**SUPPLEMENTAL INFLATABLE RESTRAINT (SIR) SYSTEM**

SIR system is designed to supplement protection provided by driver and passenger-side seat belts. A frontal crash of sufficient force up to 30 degrees off center line of vehicle will deploy driver and passenger-side air bags. Steering column and knee bolsters below instrument panel also absorb crash energy.

SIR system consists of Sensing and Diagnostic Module (SDM), driver and passenger-side air bag modules, front end discriminating sensors, SIR coil assembly and AIR BAG warning light in instrument cluster.

**AIR BAG MODULES**

Air bag modules consist of an inflatable bag and an inflator. When vehicle is in an accident of sufficient force, SDM causes current flow through deployment loops. Current passing through inflators ignites inflator charges, producing gas which rapidly inflates air bags.

**AIR BAG WARNING LIGHT**

Ignition switch applies battery voltage to AIR BAG warning light. SDM controls AIR BAG warning light operation. When ignition switch is first turned on, AIR BAG warning light verifies system operation by flashing 7 times and turning off. During vehicle operation, AIR BAG warning light warns driver of malfunctions which could potentially affect SIR system operation.

**FRONT END DISCRIMINATING SENSORS**

Front end discriminating sensors are auxiliary sensors which assist SDM in determining when deployment should occur by providing an input signal to SDM. Front end discriminating sensors are not part of deployment loop.

**KNEE BOLSTERS**

Knee bolsters are used to absorb energy and control forward movement of driver and front seat passenger. This is accomplished by limiting leg movement during a frontal crash.

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### PASSENGER-SIDE AIR BAG MODULE DISABLE SWITCH

Passenger-side air bag module disable switch is located near center of instrument panel. Switch is used to disable the passenger-side air bag module. Passenger-side air bag will not deploy in a severe frontal collision with switch in the disable position.

### SENSING & DIAGNOSTIC MODULE (SDM)

SDM monitors vehicle velocity changes to detect frontal crashes which are severe enough to warrant air bag module deployment. When a frontal crash of sufficient force is detected, SDM causes current flow to air bag modules to deploy air bags. SDM also maintains a 23 Volt Loop Reserve (23 VLR) energy supply to provide deployment energy for up to one minute after loss of voltage.

Additionally, SDM provides diagnostic monitoring of SIR system electrical components. When a malfunction is detected, SDM sets a Diagnostic Trouble Code (DTC) which can be retrieved using a scan tool. SDM warns driver of system malfunctions by controlling AIR BAG warning light.

### SIR COIL ASSEMBLY

SIR coil assembly consists of 2 or more current-carrying coils. Coils are attached to steering column and allow rotation of steering wheel, while maintaining continuous continuity of driver-side air bag deployment loop.

### COMPONENT LOCATIONS

#### COMPONENT LOCATIONS

Component	Location
AIR BAG warning light	In instrument cluster
Clockspring	Under steering wheel
Driver-side air bag	On steering wheel
Front end discriminating sensors	Lower radiator support
Passenger-side air bag	Passenger side instrument panel
Passenger-side air bag disable switch	Center of instrument panel
Sensing & diagnostic module	Under center console

### SYSTEM OPERATION CHECK

If system is functioning normally, AIR BAG warning light flashes 7 times and then turns off when ignition switch is turned on. System malfunction is indicated when light does not illuminate at all, light comes on while vehicle is driven, light flashes 7 times and remains on or light does not flash but remains on when ignition switch is turned on.

## AIR BAG SAFETY PRECAUTIONS

Observe the following precautions when working with SIR system:

- SDM maintains sufficient voltage to cause air bag deployment for up to one minute after ignition switch is turned off, battery is disconnected, or fuse powering SDM is removed. In order to begin servicing immediately, inflator modules must be removed from deployment loop. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
- After repairs, ensure AIR BAG warning light is working properly and no system faults are indicated. See **SYSTEM OPERATION CHECK**.
- Always wear safety glasses when servicing or handling an air bag module.
- Air bag modules must be stored in original special containers until used for service. Store in a clean, dry place, away from sources of extreme heat, sparks, or high electrical energy.
- Air bag modules or SDMs should not be subjected to temperatures greater than 150°F (65°C).
- SIR components should not be used if they have been dropped from a height of 3 feet (0.9 m) or greater.
- When carrying a live air bag module, trim cover should be pointed away from body to minimize injury in case of accidental deployment.
- When placing a live air bag module on a bench or other surface, always make certain that trim cover faces up. This will reduce motion of module if accidentally deployed.
- After deployment, air bag surface may contain deposits of sodium hydroxide, which can irritate skin. Always wear safety glasses, rubber gloves and a long-sleeved shirt during clean-up and wash hands using mild soap and water. Follow correct disposal procedures. See **DISPOSAL PROCEDURES**.
- At no time should any electrical source be allowed near inflator on back of air bag module.
- Do not apply power to SIR system unless all components are connected or a diagnostic test requests it, as this will set a diagnostic trouble code.
- Do not attempt to service air bag modules, front end discriminating sensor, passenger-side air bag disable switch, SDM or SIR coil assembly. If defective, these parts must be replaced.
- Do not probe a wire through insulator. Wire will be damaged and eventually fail due to corrosion.
- When performing electrical tests, prevent accidental shorting of terminals. Such mistakes can damage fuses or components and may cause a second fault code to set, making diagnosis of original problem more difficult.
- When using diagnostic tests to diagnose SIR system, under no circumstances should a volt-ohmmeter, test light or any type of electrical equipment not specified by manufacturer be used.

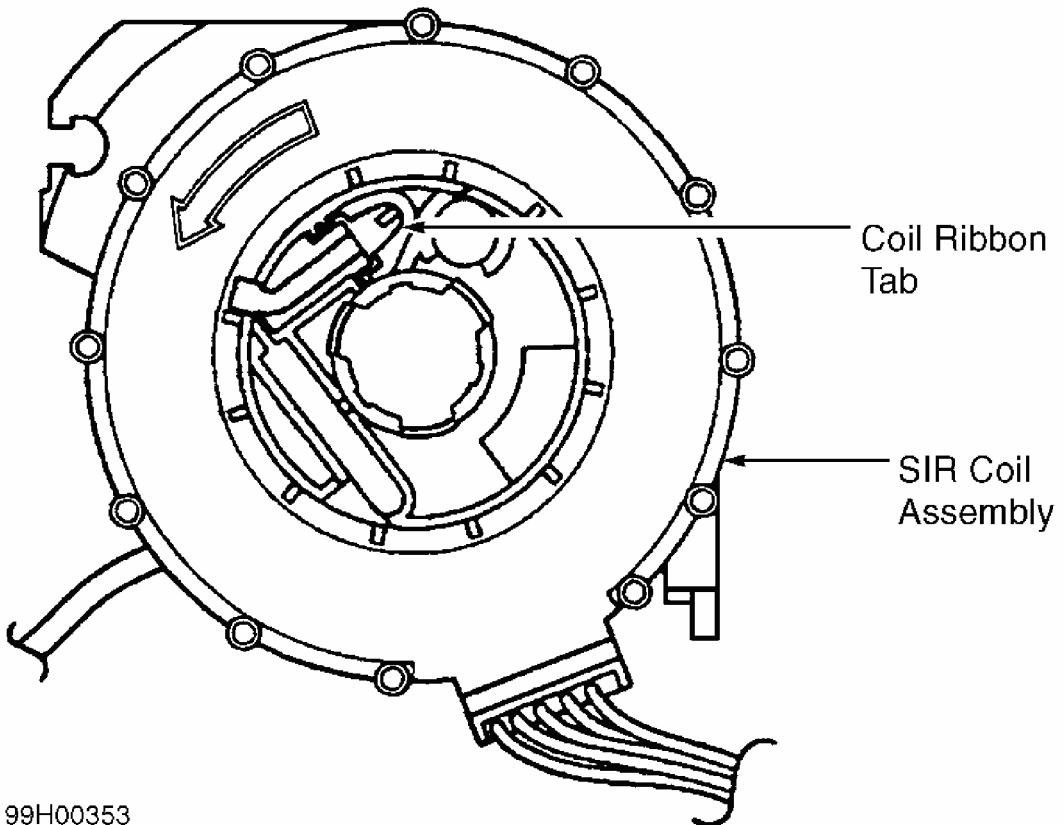
- If SIR system is not fully functional for any reason, vehicle should not be driven until system is repaired. Never remove bulbs, modules, sensors or other components or in any way disable system from operating normally.

## ADJUSTMENTS

### CENTERING COIL ASSEMBLY

**NOTE:** **New coil assemblies are pre-centered and include a centering tab that is removed once coil is installed.**

Hold coil assembly with clear bottom upward to see coil bottom. While holding coil assembly housing, depress centering tab and rotate hub in direction of arrow until it stops. See **Fig. 1**. Coil ribbon should now be wound up snugly against center hub. Rotate coil hub in opposite direction approximately 2 1-2 turns. Release spring lock between locking tabs.



**Fig. 1: Centering SIR Coil Assembly**  
Courtesy of GENERAL MOTORS CORP.

## DISABLING & ACTIVATING AIR BAG SYSTEM

**CAUTION:** Vehicle computer and memory systems may lose memory data when battery is disconnected. Driveability problems may exist until computer systems have completed a relearn cycle. See Computer Relearn Procedures in the Reference Information section. Record preset radio stations and obtain code for theft deterrent-equipped radios before disconnecting battery.

#### **DISABLING SYSTEM**

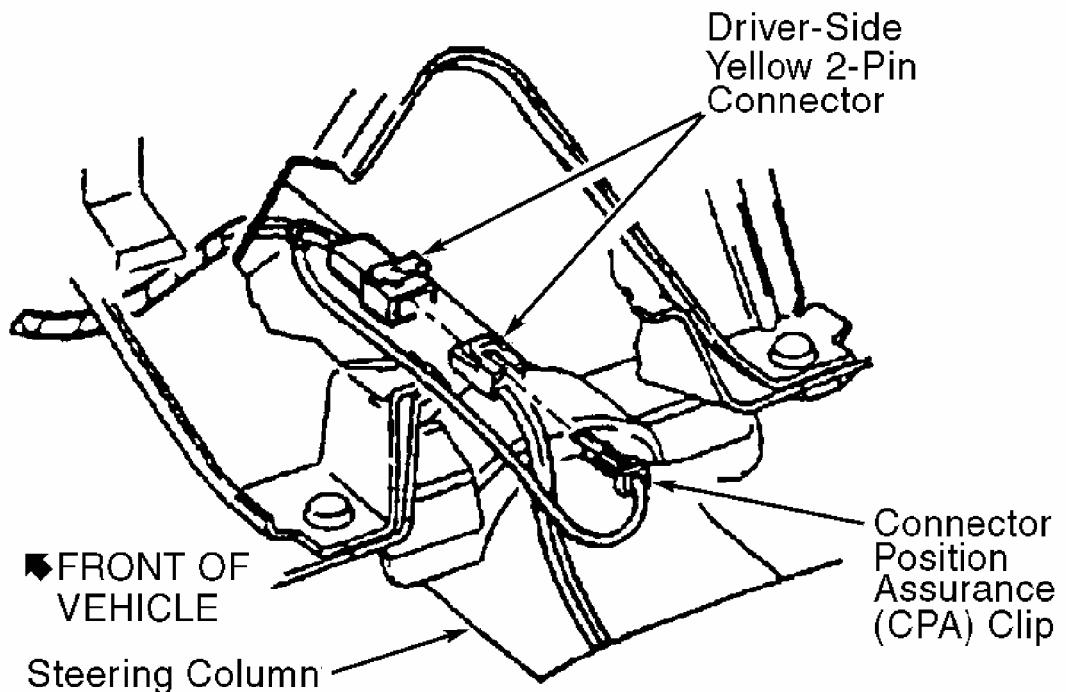
**WARNING:** Accidental air bag deployment is possible. Personal injury could result. SDM maintains sufficient voltage to cause air bag deployment for up to one minute after ignition switch is turned OFF, battery is disconnected, or fuse powering SDM is removed. In order to begin servicing immediately, inflator modules must be removed from deployment loop.

**NOTE:** When SIR fuse is removed and ignition switch is in RUN position, AIR BAG warning light will be on. This does not indicate a system malfunction.

1. Turn steering wheel to place vehicle wheels in straight-ahead position. Turn ignition switch to LOCK position and remove key.
2. Remove SIR fuse (15-amp) located in instrument panel fuse block. Remove left-side sound insulator and knee bolster. Remove Connector Position Assurance (CPA) clip and disconnect driver-side air bag module Yellow 2-pin connector at base of steering column. See [Fig. 2](#). Remove CPA clip and disconnect passenger-side air bag module Yellow 2-pin connector located behind glove box. See [Fig. 3](#). System is now disabled.

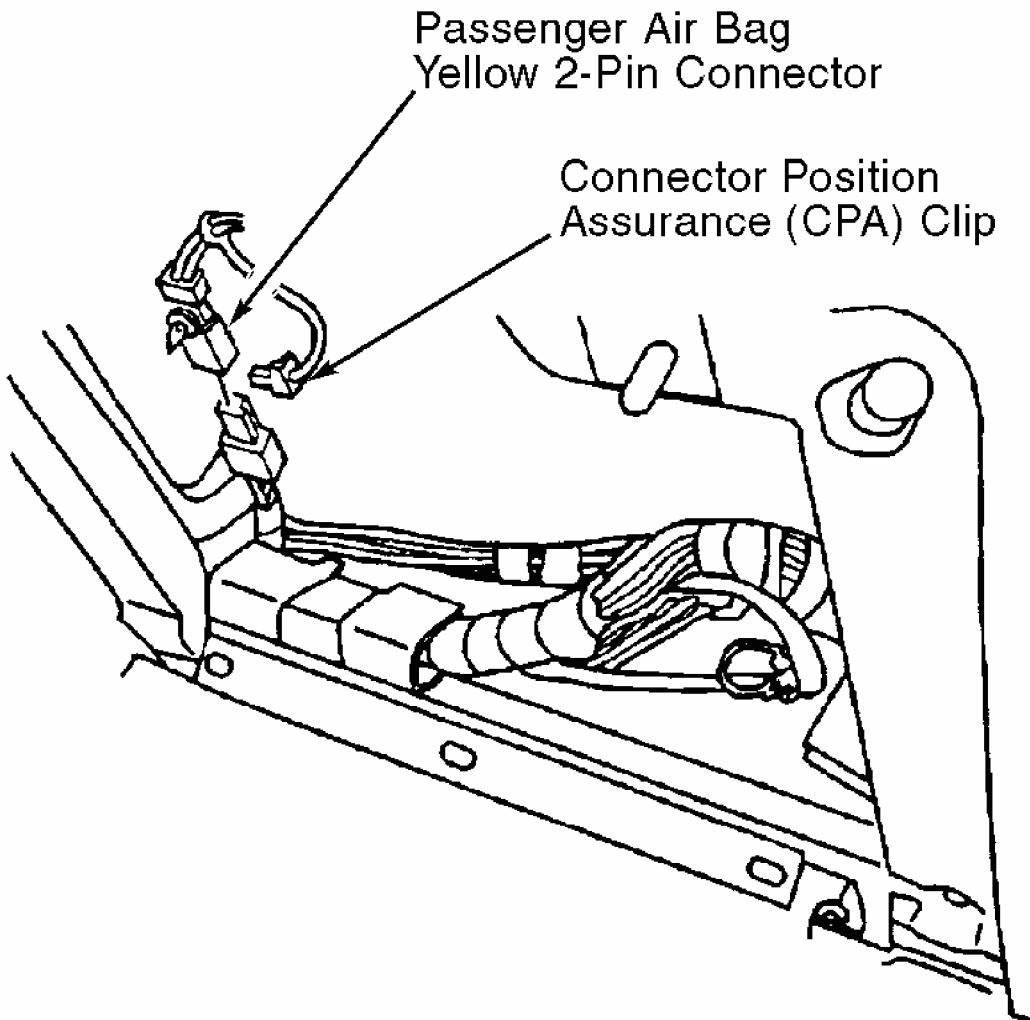
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**Fig. 2: Locating Driver-side Air Bag Module Yellow 2-pin Connector**  
Courtesy of GENERAL MOTORS CORP.



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**Fig. 3: Locating Passenger-side Air Bag Module Yellow 2-pin Connector**  
Courtesy of GENERAL MOTORS CORP.

#### ACTIVATING SYSTEM

Remove key from ignition switch. Connect driver and passenger-side air bag module Yellow 2-pin connectors located at base of steering column and behind glove box. Install CPA clips. Install left sound insulator and knee bolster. Install SIR fuse. Check system for proper operation. See **SYSTEM OPERATION CHECK**.

#### DISPOSAL PROCEDURES

**WARNING:** Accidental air bag deployment is possible. Personal injury could result. Deploy air bags before disposal. DO NOT

**dispose of undeployed air bag modules at normal refuse locations. Undeployed air bag modules contain substances that can cause severe illness or personal injury if sealed container is damaged during disposal.**

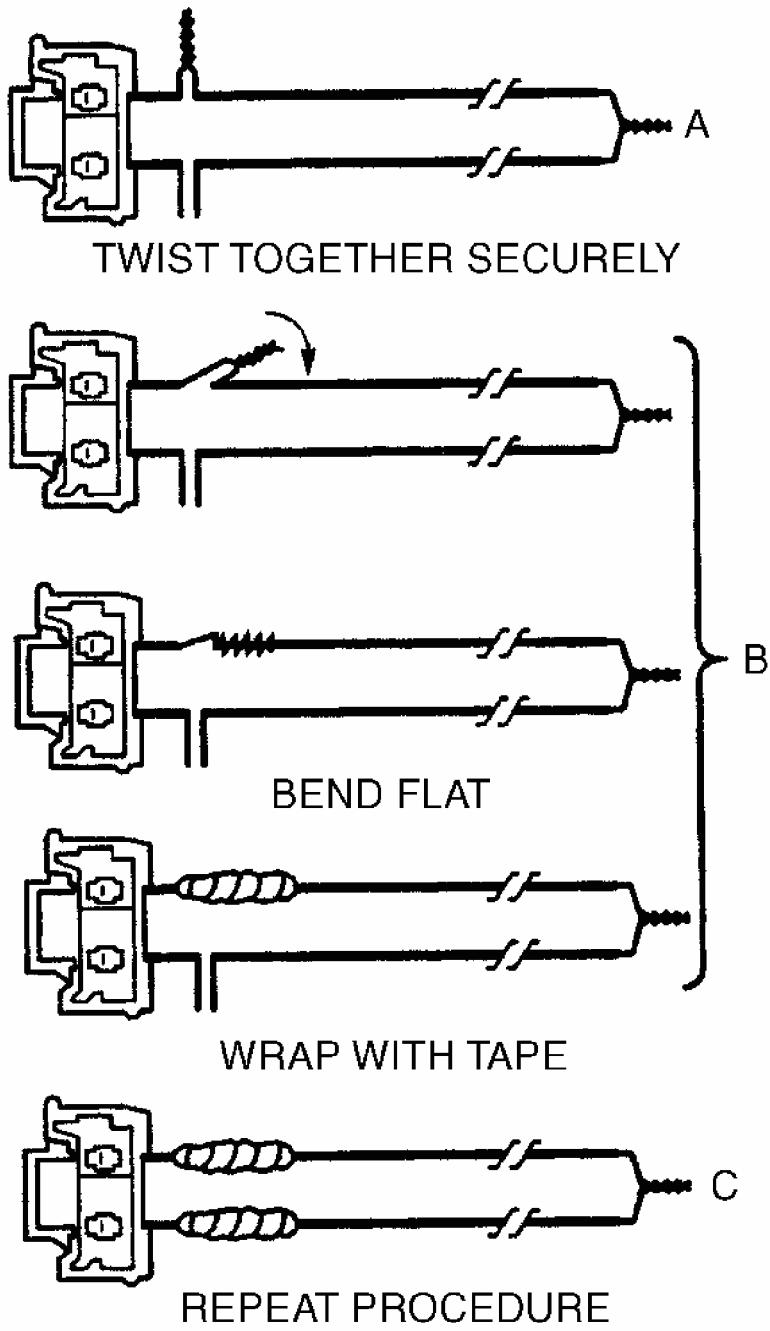
**NOTE:** **If vehicle is to be scrapped, perform on-vehicle air bag deployment procedure.**

#### **ON-VEHICLE DEPLOYMENT**

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS**. Turn ignition switch OFF, remove key and put on safety glasses. Disconnect driver and passenger-side air bag module connectors. See **Fig. 2** and **Fig. 3**. Cut air bag module harness connectors from vehicle leaving at least 6" (152 mm) of wire at connector.
2. Strip 0.5" (13 mm) of insulation from each connector wire lead. Cut 2 15-foot deployment wires from 18-gauge multi-strand wire. Strip 0.5" (13 mm) of insulation from both ends of wires. Twist wires together at one end to short.
3. Twist together one connector wire lead to other end of each deployment wire. See **Fig. 4**. Bend twisted connection flat and wrap tightly with electrical tape to insulate. Repeat this step for other connector wire lead.
4. Remove all loose objects from front seat and ensure no one is in vehicle. Connect deployment harness to air bag module connector. Stretch wires away from car as far as possible.
5. Repeat steps 2) through 4) for passenger-side air bag module. Cover windshield and front door openings with a drop cloth.
6. Separate wire ends. Connect each pair of wires to a 12-volt battery. Air bags should deploy. Disconnect wires from battery. DO NOT touch air bag module area for at least 10 minutes due to heat generated during deployment. Wear gloves and safety glasses before handling deployed air bag module. Wash hands with mild soap and water afterward. Deployed air bag modules can be disposed of like any other part. Repeat deployment procedure for passenger-side air bag.
7. If air bag modules do not deploy, carefully remove from vehicle. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Temporarily store module with trim facing up. Contact manufacturer for proper disposal instructions.

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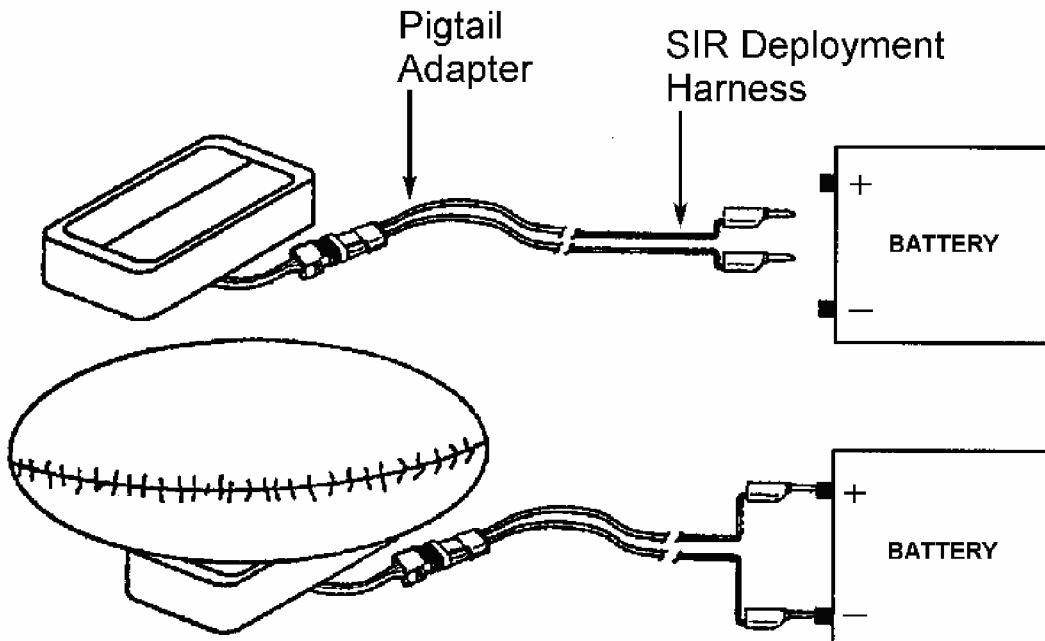
**Fig. 4: Preparing Deployment Harness For On-vehicle Deployment**  
Courtesy of GENERAL MOTORS CORP.

### OFF-VEHICLE DEPLOYMENT

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS**. Turn ignition switch OFF, remove key and put on safety glasses. Short 2 SIR Deployment Harness (J-

38826) leads together by fully seating one banana plug into the other. Connect appropriate pigtail adapter to SIR deployment harness. See **Fig. 5**.

2. Remove driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Remove horn lead, redundant steering wheel control leads, horn buttons and steering wheel control buttons from air bag module, if applicable.
3. Place air bag module with vinyl trim cover facing up, preferably on paved outdoor surface, away from any loose or flammable objects. Clear space at least 6 feet (1.8 m) in diameter around air bag. Extend SIR deployment harness and pigtail adapter to full length away from air bag module. Place a 12-volt battery near shorted end of SIR deployment harness.
4. Connect air bag module to pigtail adapter on SIR deployment harness. Ensure area around air bag module is clear of people or loose objects. Verify that air bag module is resting with trim cover facing up.
5. Separate 2 banana plugs on SIR deployment harness. Connect SIR deployment harness wires to battery. Air bag module should deploy immediately. If air bag module does not deploy, go to step 7. Disconnect SIR deployment harness from battery. Short 2 SIR deployment harness leads together. DO NOT touch metal surfaces of air bag module for at least 10 minutes due to heat generated during deployment. Wear gloves and safety glasses when handling deployed air bag module. Wash hands with mild soap and water after handling. Dispose of deployed air bag module as you would any other part. Inspect pigtail adapter and SIR deployment harness for damage after each use.
6. Remove passenger-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Mount passenger-side air bag module in Deployment Fixture (J39401-B). Repeat deployment procedure for air bag module. If passenger-side air bag module fails to deploy, go to next step.
7. Ensure that SIR deployment harness is disconnected from battery and that 2 banana plugs have been shorted together. Disconnect pigtail adapter from air bag module. Temporarily store air bag module with trim cover facing up. Contact manufacturer for proper disposal instructions.



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**Fig. 5: Preparing Deployment Harness For Off-vehicle Deployment**  
Courtesy of GENERAL MOTORS CORP.

## POST-COLLISION INSPECTION

When a vehicle has been involved in a collision, certain components of the passive restraint system must be inspected or replaced. See **AIR BAG/SRS COMPONENT INSPECTION & REPLACEMENT TABLES** article in the GENERAL INFORMATION section.

## REMOVAL & INSTALLATION

**WARNING:** Accidental air bag deployment is possible. Personal injury could result. See **AIR BAG SAFETY PRECAUTIONS**. After component replacement, check system operation. See **SYSTEM OPERATION CHECK**.

### SENSING & DIAGNOSTIC MODULE (SDM)

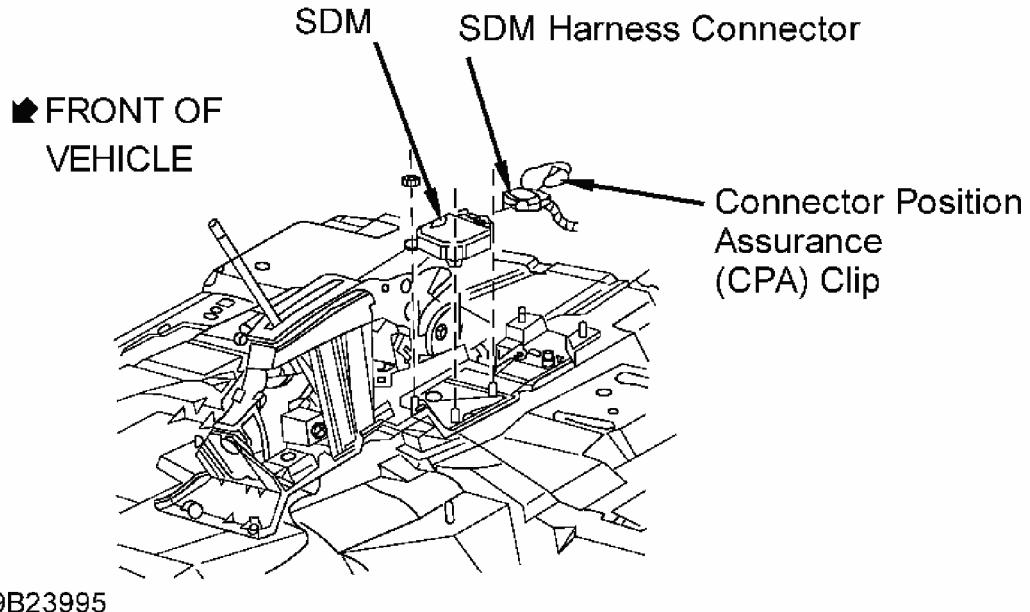
#### Removal

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS**. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Remove driver seat, seat belt, carpet retaining sill trim molding and floor console (if equipped). Make an "X" shaped incision in carpet directly over SDM. See **Fig. 6**. Fold

back carpet to access SDM. Remove Connector Position Assurance (CPA) clip and disconnect SDM harness connector from SDM. Remove SDM mounting nuts and SDM.

#### Installation

To install, reverse removal procedure. Tighten SDM mounting nuts to specification. See **TORQUE SPECIFICATIONS**. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check system for proper operation. See **SYSTEM OPERATION CHECK**.



**Fig. 6: Identifying Sensing & Diagnostic Module (SDM)**  
Courtesy of GENERAL MOTORS CORP.

#### FRONT END DISCRIMINATING SENSORS

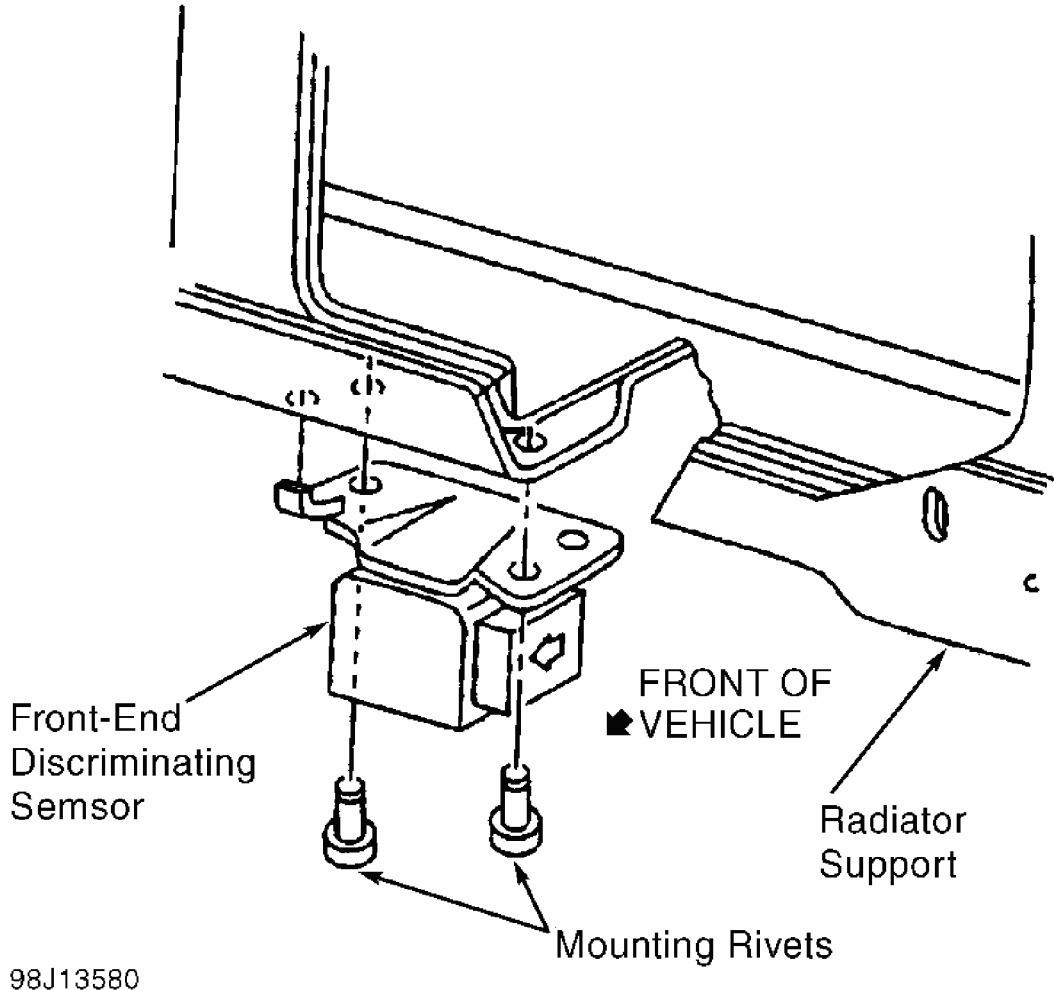
##### Removal

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS**. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Remove off-road skid plate, if equipped. Remove CPA clip from connector and disconnect sensor harness connector. Drill out rivets. Remove front end discriminating sensor. See **Fig. 7**.

##### Installation

To install, reverse removal procedure. Ensure arrow on sensor is installed pointing forward.

Install mounting rivets. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check system for proper operation. See **SYSTEM OPERATION CHECK**.



**Fig. 7: Identifying Front End Discriminating Sensors**  
Courtesy of GENERAL MOTORS CORP.

## STEERING WHEEL

### Removal

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS**. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Remove driver-side air bag module. See **AIR BAG MODULES**. Remove steering wheel horn contact by pressing inward to stop and rotating 90 degrees. Disconnect remaining steering wheel connectors, if equipped. Remove steering wheel nut. Using

Steering Wheel Puller (J-1859-A), remove steering wheel.

#### **Installation**

1. To install, reverse removal procedure. Tighten steering wheel nut to specification. See **TORQUE SPECIFICATIONS**. Install driver-side air bag module. See **AIR BAG MODULES**.
2. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check system for proper operation. See **SYSTEM OPERATION CHECK**.

### **PASSENGER-SIDE AIR BAG MODULE DISABLE SWITCH**

#### **Removal**

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS**. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Remove instrument panel trim. Release 4 locking tabs on passenger-side air bag module disable switch and remove from instrument panel. Disconnect switch connector.

#### **Installation**

To install, reverse removal procedure. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check system for proper operation. See **SYSTEM OPERATION CHECK**.

### **SIR COIL ASSEMBLY**

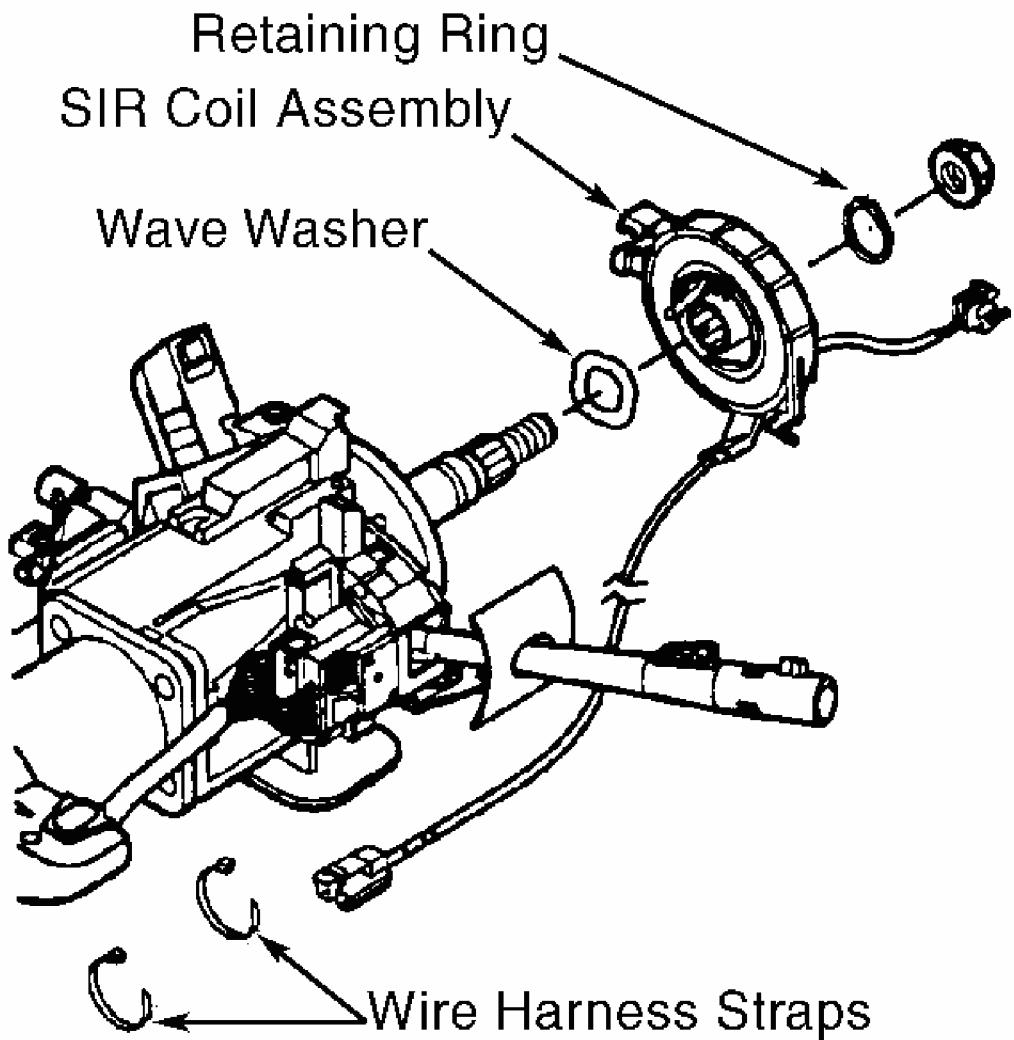
#### **Removal**

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS**. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.
2. Remove driver-side air bag module. See **AIR BAG MODULES**. Remove steering wheel. See **STEERING WHEEL**.
3. Remove driver-side knee bolster. Remove lower steering column cover trim cover screws and lower cover. Remove upper steering column cover mounting screw and remove upper cover.
4. Remove wire harness straps. See **Fig. 8**. Disconnect SIR coil connector. Remove retaining ring and SIR coil assembly. Remove wave washer and wire harness straps from steering column wire harness.

#### **Installation**

To install, reverse removal procedure. Ensure coil assembly hub and steering shaft are centered. To center coil assembly, see **CENTERING COIL ASSEMBLY** under **ADJUSTMENTS**. Tighten upper and lower steering column covers and steering wheel nut to

specification. See **TORQUE SPECIFICATIONS**. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check system for proper operation. See **SYSTEM OPERATION CHECK**.



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**Fig. 8: Identifying SIR Coil Assembly**  
Courtesy of GENERAL MOTORS CORP.

#### AIR BAG MODULES

##### Removal (Driver-side)

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS**. Disable air bag

system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

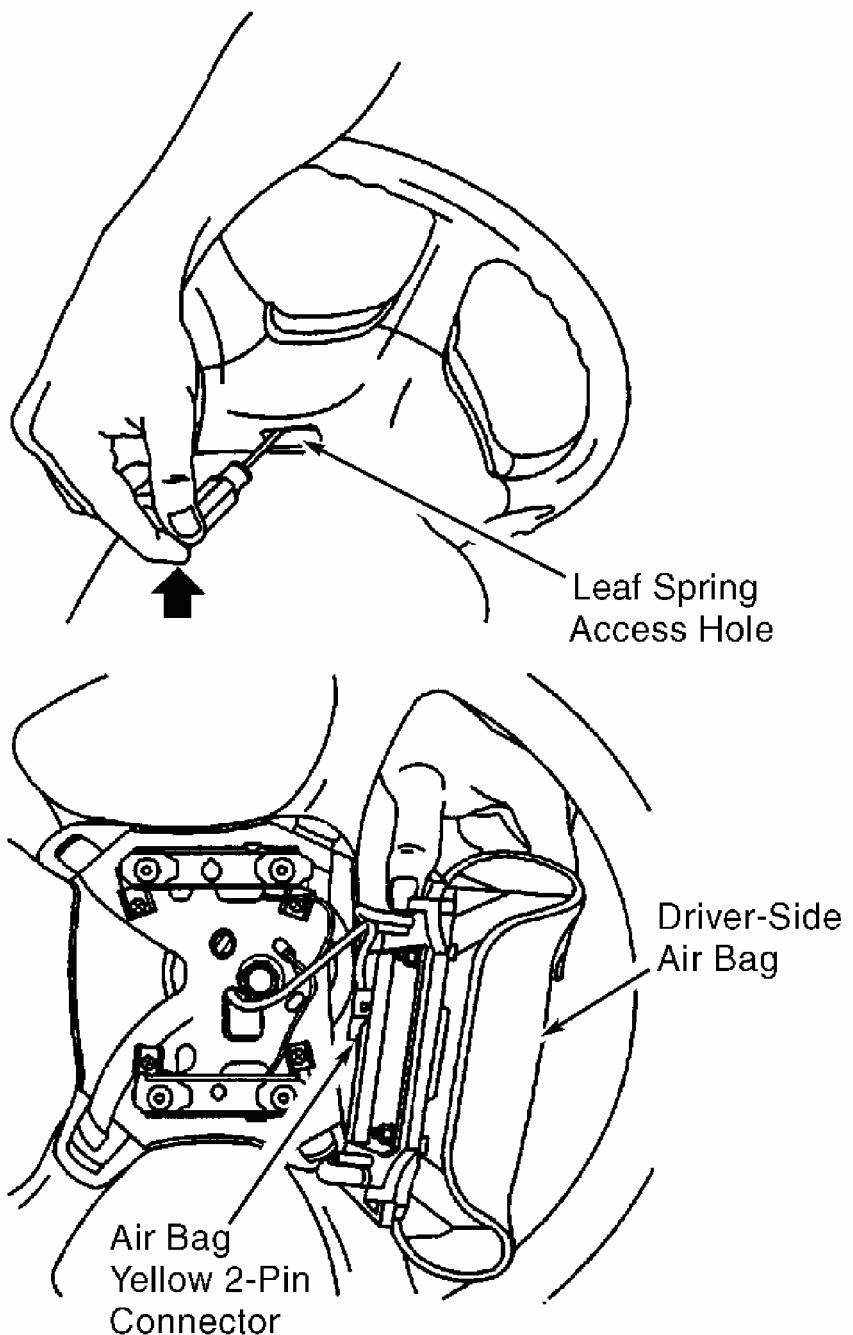
2. Turn steering wheel 90 degrees to gain access to rear steering wheel holes. Insert screwdriver into each hole and push leaf springs to release air bag module retaining pins. See **Fig. 9**. Turn steering wheel 180 degrees to access remaining holes. Pull air bag module away from wheel. Disconnect air bag wire harness from clips on air bag module and steering wheel. Remove Connector Position Assurance (CPA) clip and disconnect driver-side air bag module Yellow 2-pin connector from air bag module. Remove air bag module.

#### **Installation**

1. Install CPA clip and air bag module Yellow 2-pin connector to air bag module. Connect air bag wire harness to clips on steering wheel and air bag module. Install air bag module by pressing firmly into position on steering wheel to engage and latch leaf springs on notched pins. DO NOT pinch wires.
2. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check system for proper operation. See **SYSTEM OPERATION CHECK**.

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**Fig. 9: Removing Driver-side Air Bag Module**  
Courtesy of GENERAL MOTORS CORP.

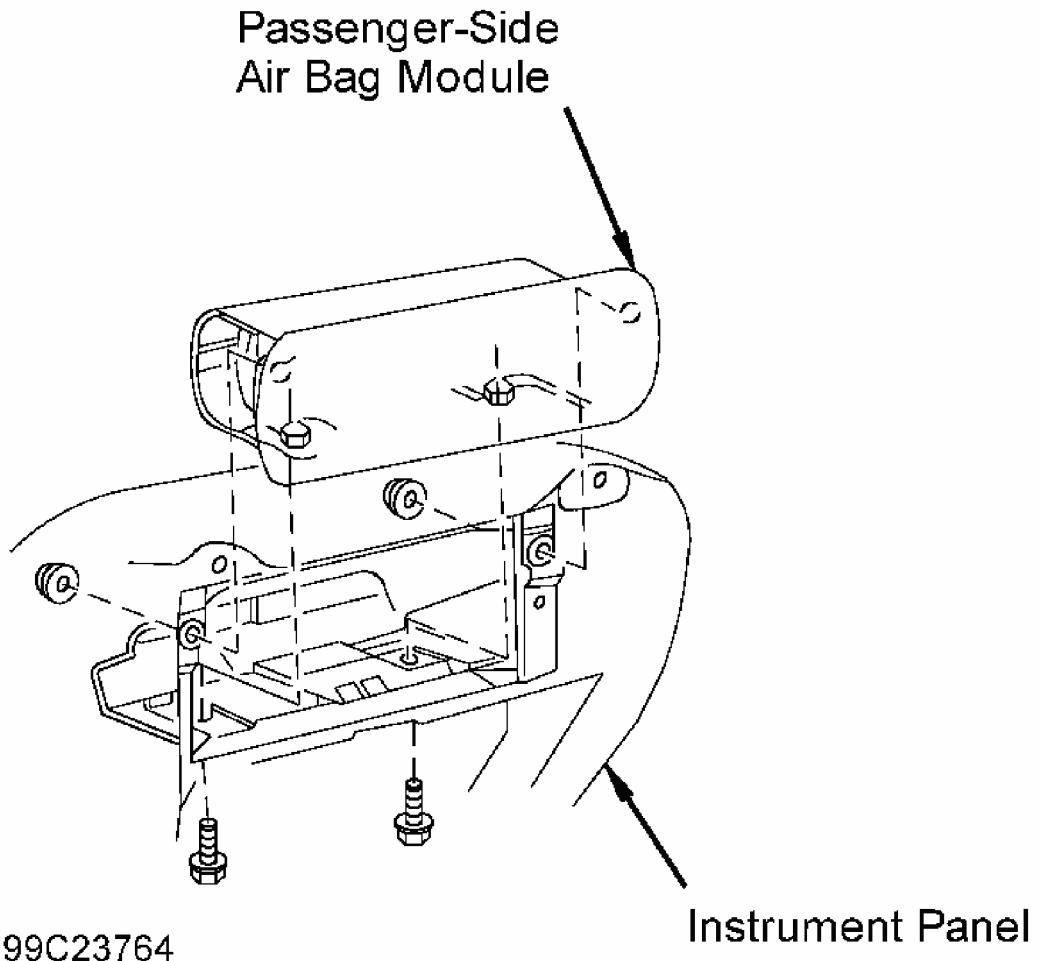
### Removal (Passenger-side)

1. Before proceeding, see **AIR BAG SAFETY PRECAUTIONS**. Disable air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**.

2. Remove radio. Remove glove box door. Remove Connector Position Assurance (CPA) clip and disconnect passenger-side air bag module Yellow 2-pin connector. Remove 2 nuts and 2 bolts from air bag module. See **Fig. 10**. Remove passenger-side air bag module.

#### Installation

To install, reverse removal procedure. Tighten passenger-side air bag module nuts and bolts to specification. See **TORQUE SPECIFICATIONS**. Activate air bag system. See **DISABLING & ACTIVATING AIR BAG SYSTEM**. Check system for proper operation. See **SYSTEM OPERATION CHECK**.



**Fig. 10: Identifying Passenger-side Air Bag Module**  
Courtesy of GENERAL MOTORS CORP.

**WARNING:** Accidental air bag deployment is possible. Personal injury could result. See **AIR BAG SAFETY PRECAUTIONS**. After component replacement, check system operation. See **SYSTEM OPERATION CHECK**.

### **DIAGNOSTIC TROUBLE CODES (DTCS)**

Sensing & Diagnostic Module (SDM) provides a record of DTCs, stored according to type. SDM performs diagnostic monitoring of SIR system electrical components and sets a Diagnostic Trouble Code (DTC) when a malfunction is detected. Current DTCs are stored in SDM and are erased when fault is corrected. Current DTCs can be read using a scan tool such as Tech 2.

### **SCAN TOOL DIAGNOSTICS**

Scan Tool (Tech 2) reads and clears current and history codes. Ensure scan tool contains correct software cartridge for SIR diagnostics. To use scan tool, connect it to Data Link Connector (DLC), plug in power source and turn ignition switch to ON position. Follow scan tool manufacturer instructions for communication with SIR system. Scan tool reads serial data from SDM data link output terminal A4 at DLC terminal No. 2.

### **DIAGNOSTIC PROCEDURES**

Diagnostic procedures are designed to find and repair SIR malfunctions. It is important to use diagnostic tests and follow sequence listed below:

#### **Perform SIR System Diagnostic Check**

SIR diagnostic system check should always be starting point for any SIR diagnostics. It checks for proper AIR BAG warning light operation and SIR trouble codes. See **SIR DIAGNOSTIC SYSTEM CHECK** under DIAGNOSTIC TESTS.

#### **Refer To Proper Diagnostic Test**

SIR diagnostic system check indicates correct test to diagnose SIR problems. Bypassing procedures may result in extended diagnostic time, incorrect diagnosis and incorrect parts replacement.

#### **Repeat SIR Diagnostic System Check**

Performing SIR diagnostic system check after all repair or diagnostic procedures ensures that repair has been made correctly and that no other conditions exist.

### **DIAGNOSTIC TESTS**

#### **DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION**

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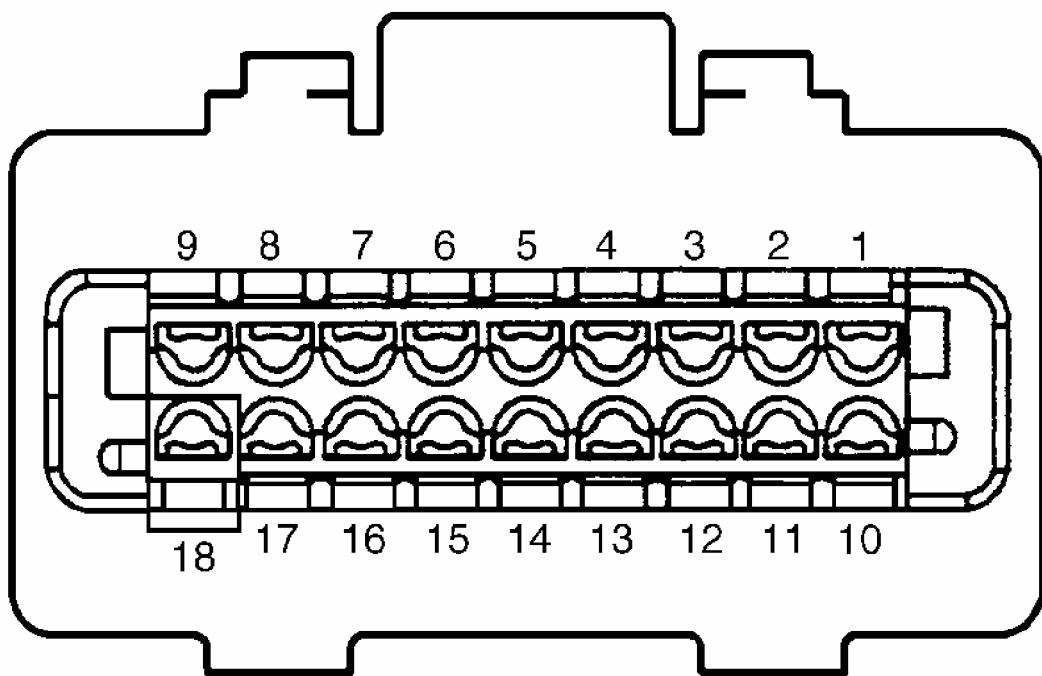
Trouble Code	Possible Cause
<b>DTC B0016</b>	Passenger deployment loop resistance low
<b>DTC B0017</b>	Passenger deployment loop open
<b>DTC B0018</b>	Passenger deployment loop voltage out of range
<b>DTC B0022</b>	Driver deployment loop resistance low
<b>DTC B0024</b>	Driver deployment loop voltage out of range
<b>DTC B0026</b>	Driver deployment loop open
<b>DTC B0035</b>	Discriminating sensor closed or short to ground
<b>DTC B0036</b>	Discriminating sensor open or short to voltage
<b>DTC B0051</b>	Deployment commanded
<b>DTC B0053</b>	Deployment commanded with loop malfunction
<b>DTC B0090</b>	Disable switch voltage out of range
<b>DTC B0091</b>	Disable switch wrong state
<b>DTC B1000</b>	SDM Malfunction
<b>DTC B1001</b>	Option configuration error

### CONNECTOR IDENTIFICATION

**NOTE:** Refer to illustrations to identify SIR connector terminals. See Fig. 11 - Fig. 17 .

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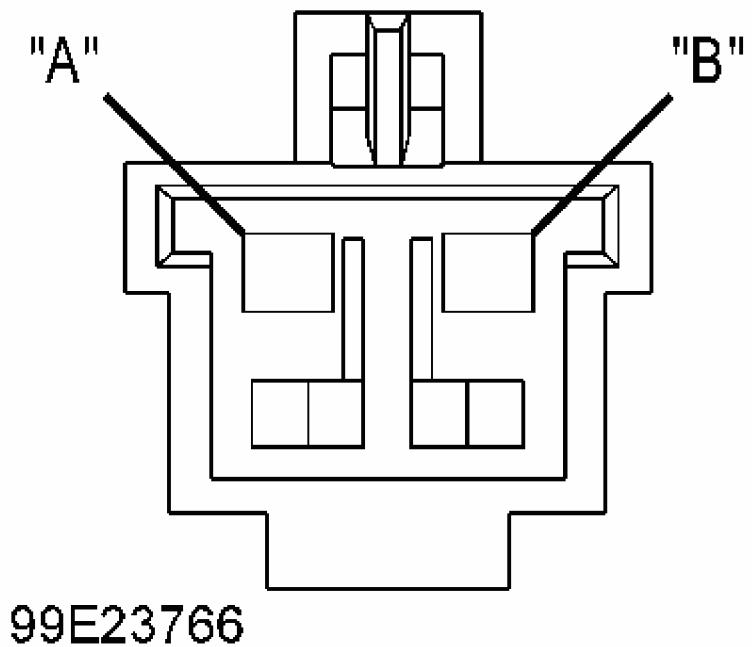


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**Fig. 11: Identifying SDM Connector Terminals**  
Courtesy of GENERAL MOTORS CORP.

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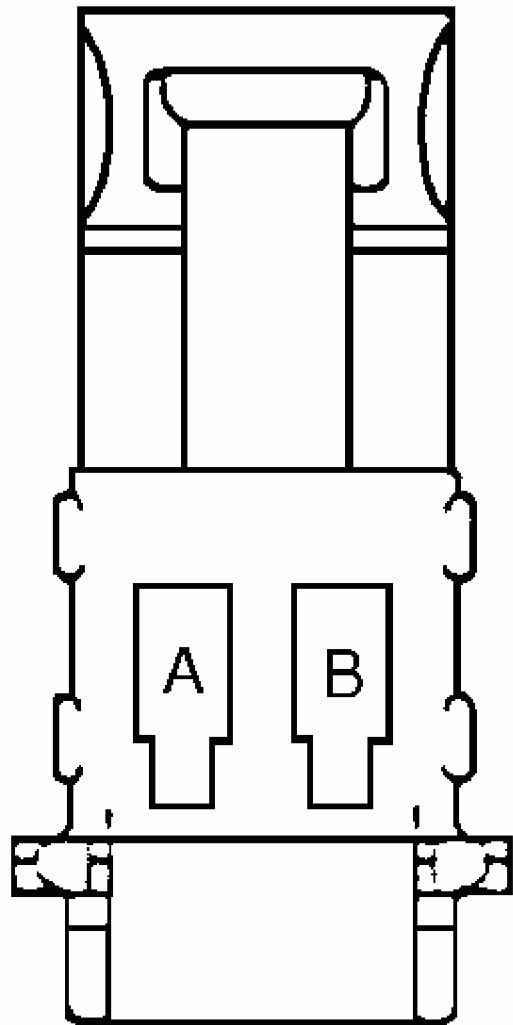
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**Fig. 12: Identifying Passenger-side Air Bag Module Connector Terminals**  
Courtesy of GENERAL MOTORS CORP.

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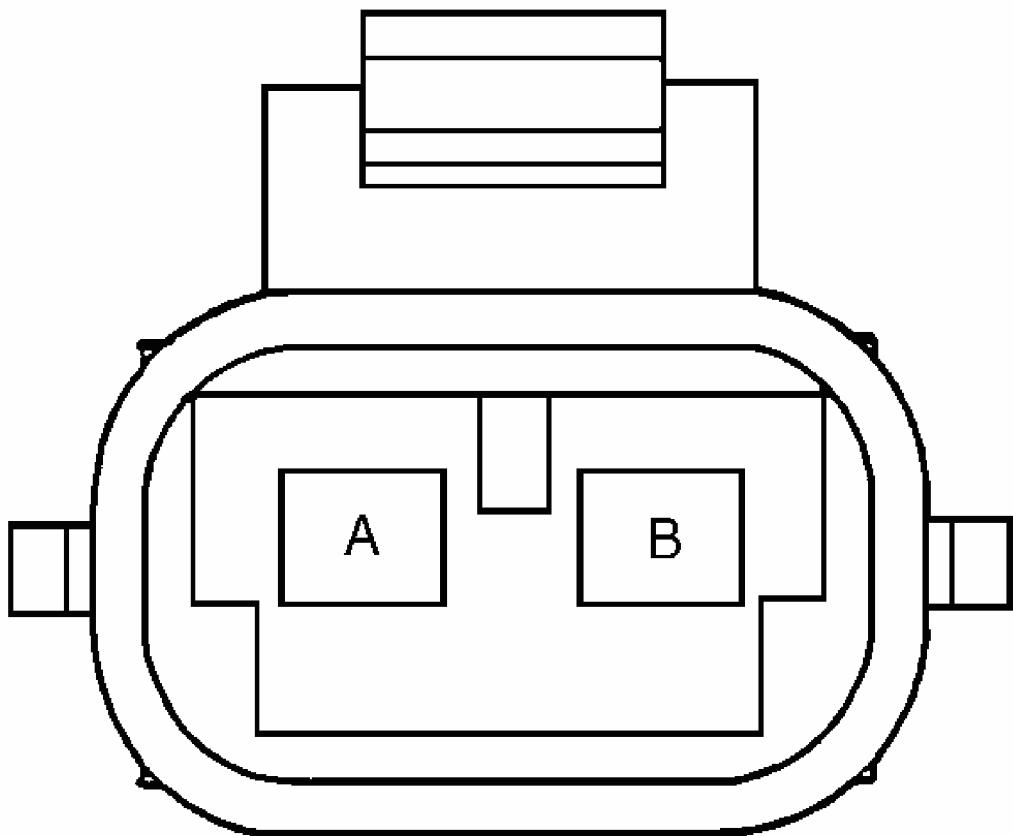


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**Fig. 13: Identifying SIR Coil Connector Terminals**  
**Courtesy of GENERAL MOTORS CORP.**

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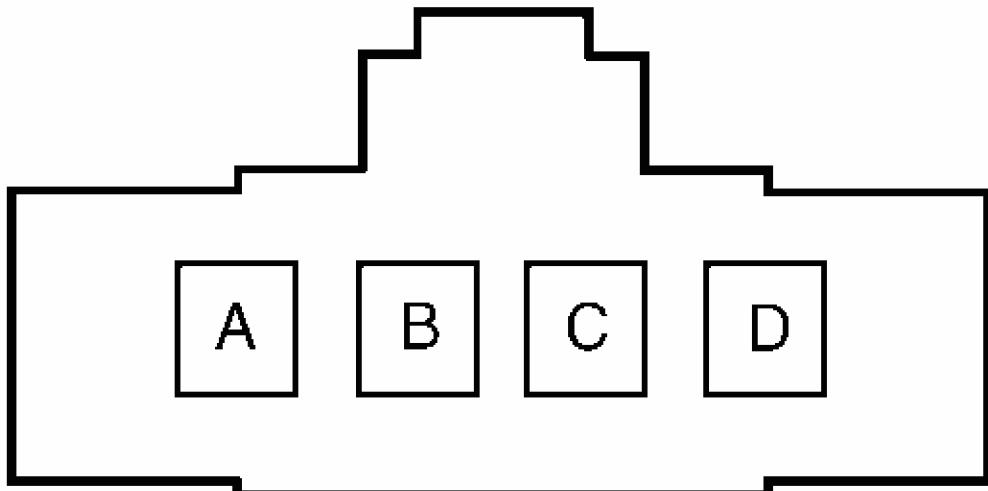


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**Fig. 14: Identifying Right Front End Discriminating Sensor Connector Terminals**  
Courtesy of GENERAL MOTORS CORP.

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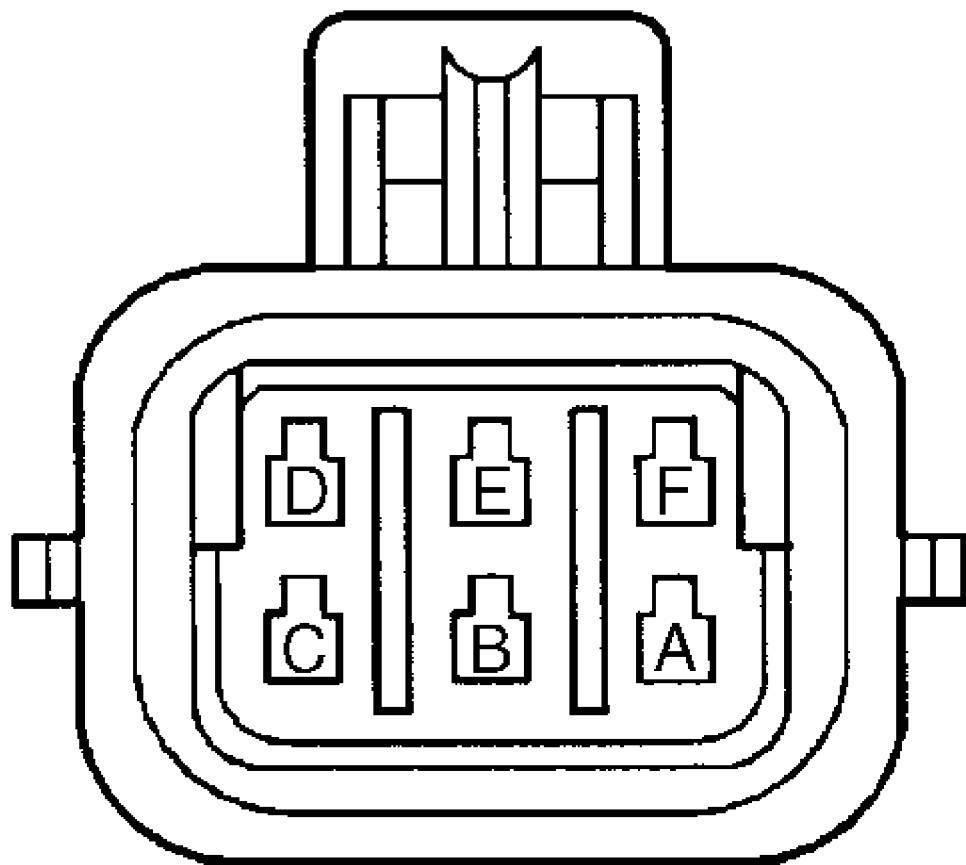


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**Fig. 15: Identifying Left Front End Discriminating Sensor Connector Terminals**  
Courtesy of GENERAL MOTORS CORP.

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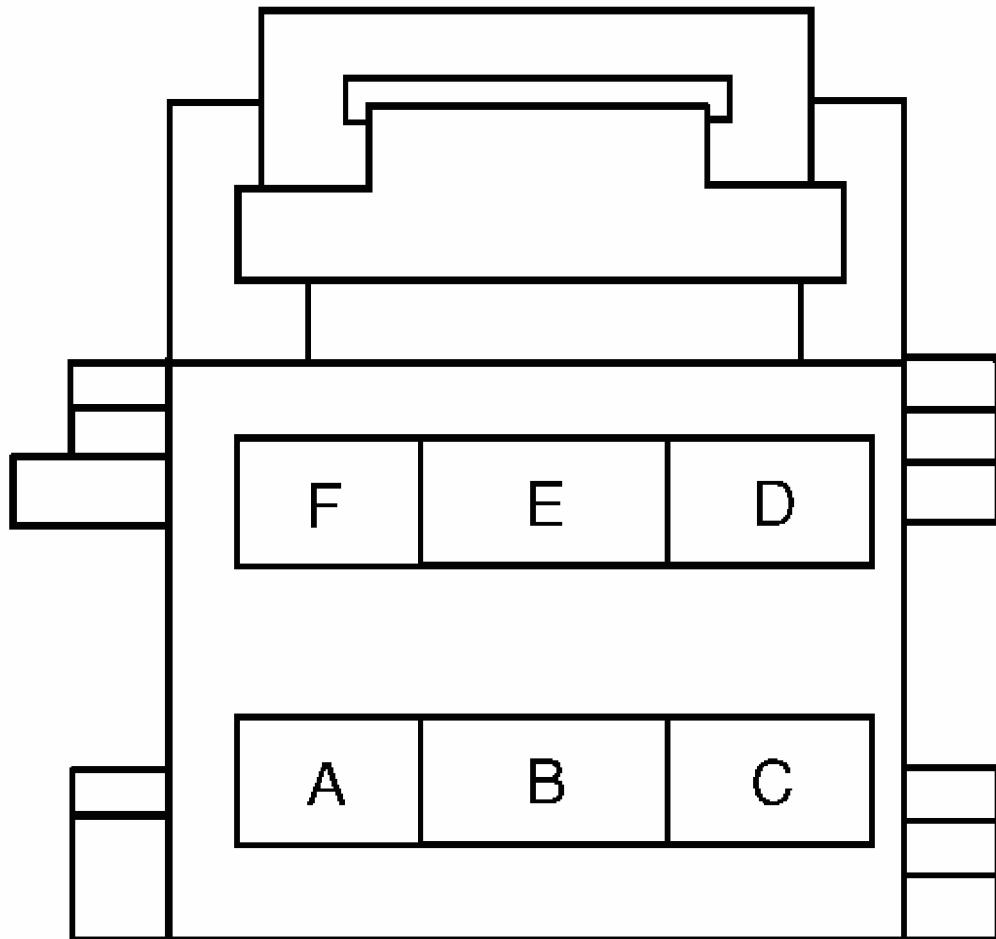
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**Fig. 16: Identifying Front End Discriminating Circuit In-line Connector (C109) Terminals**

Courtesy of GENERAL MOTORS CORP.

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**Fig. 17: Identifying Passenger-side Air Bag Module Disable Switch Connector Terminals**

Courtesy of GENERAL MOTORS CORP.

### SIR DIAGNOSTIC SYSTEM CHECK

**WARNING: To avoid air bag deployment and injury when trouble shooting system, only use test equipment specified in diagnostic tests. Carefully follow all instructions.**

#### Diagnostic Procedure

1. Observe AIR BAG warning light while turning ignition on. If AIR BAG warning light

flashes 7 times and then goes off, go to next step. If AIR BAG warning light does not flash 7 times and go off, inspect vehicle for signs of damage or addition of aftermarket devices which could affect operation of AIR BAG warning light. If visual inspection is okay, go to **AIR BAG WARNING LIGHT CIRCUIT MALFUNCTION**.

2. Connect scan tool to Data Link Connector (DLC), located under left side of instrument panel. Turn ignition on. If scan tool powers up, go to next step. If scan tool does not power up, inspect and repair data link communications circuits.
3. If scan tool communicates with SDM, go to next step. If scan tool does not communicate with SDM, inspect and repair data link communications circuits.
4. Request SIR DTC display. If scan tool displays DTCs, go to next step. If scan tool does not display any DTCs, system is functioning normally.
5. If scan tool displays DTCs that begin with "U", inspect and repair data link communications circuits. If other DTCs are displayed, perform appropriate diagnostic test. See **DIAGNOSTIC TROUBLE CODE (DTC) IDENTIFICATION** table.

## **AIR BAG WARNING LIGHT CIRCUIT MALFUNCTION**

### **Circuit Description**

When ignition switch is turned on, AIR BAG warning light will flash 7 times, during which time Sensing and Diagnostic Module (SDM) tests SIR system. If no system faults are detected, SDM will turn AIR BAG warning light off. If a malfunction is detected, SDM will cause AIR BAG warning light to come on steady.

### **Diagnostic Aids**

If Ignition 1 (IG1) voltage is out of normal range, (9-16 volts), AIR BAG warning light will come on with no DTCs set. Loss of serial data communication between SDM and Instrument Panel Cluster (IPC) will also cause AIR BAG warning light to come on.

**NOTE:** **For circuit number and wire color identification, see WIRING DIAGRAMS .**

### **Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK**.
2. Check Instrument Panel Cluster (IPC) for correct operation. If IPC is working correctly, go to next step. If IPC is not working correctly, diagnose and repair IPC. Go to step 16 .
3. Turn ignition off. Check AIR BAG warning light for correct operation when turning ignition on. If AIR BAG warning light flashes 7 times, go to next step. If AIR BAG warning light does not flash 7 times, go to step 13 .
4. Install scan tool to Data Link Connector (DLC), located under left side of instrument

panel. Turn ignition on. Using scan tool, establish communication with Instrument Panel Cluster (IPC). If DTC U1088 is not retrieved, go to next step. If DTC U1088 is retrieved, diagnose and repair data link communication circuits.

5. Using scan tool, turn AIR BAG warning light on. If AIR BAG warning light comes on, go to next step. If AIR BAG warning light does not come on, go to step 13 .
6. Using scan tool, establish communication with SDM and request SIR data list. If ignition voltage displayed is more than 9 volts, go to next step. If ignition voltage is 9 volts or less, go to step 8 .
7. If ignition voltage is more than 16 volts, inspect vehicle electrical system. If ignition voltage is 16 volts or less, go to step 15 .
8. Turn ignition off. Disconnect SDM connector. If SDM connector shows signs of corrosion, poor connections or damage, go to step 14 . If SDM connector is okay, go to next step.
9. Turn ignition off. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), inspect circuit 1139 for an open or high resistance between fuse block and SDM harness connector terminal A1. If resistance is 2 ohms or less, go to step 11 . If resistance is more than 2 ohms, go to next step.
10. Repair open or high resistance in circuit 1139. See **WIRE REPAIR** . Go to step 16 .
11. Turn ignition on. Measure voltage between battery side of SIR fuse terminal and ground. If voltage is near 12 volts, go to next step. If voltage is not near 12 volts, locate and repair source of voltage loss. Go to step 16 .
12. Turn ignition off. Measure resistance between SDM terminal A18 and ground. If resistance is less than 2 ohms, go to step 15 . If resistance is 2 ohms or more, repair high resistance in circuit 1851. See **WIRE REPAIR** . Go to step 16 .
13. Replace Instrument Panel Cluster. Go to step 16 .
14. Replace SDM connector. See **WIRE REPAIR** . Go to step 16 .
15. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
16. Reconnect all SIR system components. Ensure that all components are properly mounted. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

## **DTC B0016 : PASSENGER DEPLOYMENT LOOP RESISTANCE LOW**

### **Circuit Description**

When ignition is first turned on, Sensing and Diagnostic Module (SDM) performs tests to diagnose critical internal malfunctions. SDM then performs tests on deployment loop to check for continuity and shorts to ground or voltage.

### **Conditions For Setting DTC**

DTC will set if deployment loop resistance is less than 1.3 ohms for 500 milliseconds.

**Action Taken**

SDM turns on AIR BAG warning light and sets DTC.

**Conditions For Clearing DTC**

Current DTC clears when a CLEAR CODES command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

**Diagnostic Aids**

Condition could be caused by a short between circuits 1403 and 1404. A malfunctioning shorting bar on passenger-side air bag connector could also cause condition.

**NOTE:** For circuit number and wire color identification, see [WIRING DIAGRAMS](#).

**Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to [SIR DIAGNOSTIC SYSTEM CHECK](#).
2. Turn ignition off. Disconnect passenger-side air bag module Yellow 2-pin connector located above right-side of instrument panel. See [Fig. 3](#). If connector is damaged or corroded, go to next step. If connector is okay, go to step 4.
3. If harness side of connector is damaged, replace connector. See [WIRE REPAIR](#). Go to step 10. If passenger-side air bag connector is damaged, replace passenger-side air bag module. See [AIR BAG MODULES](#) under REMOVAL & INSTALLATION. Go to step 10.
4. Reconnect passenger-side air bag module Yellow 2-pin connector. Ensure Connector Position Assurance (CPA) clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0016 is retrieved, go to next step. If DTC B0016 is not retrieved, go to [DIAGNOSTIC AIDS](#).
5. Turn ignition off. Disconnect passenger-side air bag module Yellow 2-pin connector located at base of steering column. Install SIR Driver-Passenger Load Tool (J-38715-A) using Load Tool Adapter (J38715-5) to harness connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0016 is retrieved, go to step 7. If DTC B0016 is not retrieved, go to next step.
6. Turn ignition off. Replace passenger-side air bag. See [AIR BAG MODULES](#) under REMOVAL & INSTALLATION. Go to step 10.
7. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) from harness connector. Disconnect SDM harness connector. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure resistance between SDM harness connector terminals A3 and A8. If resistance is not infinite, go to next step. If resistance is infinite, go to step 9.

8. Repair short between circuit 1403 and circuit 1404. See **WIRE REPAIR** . Go to step 10 .
9. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
10. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

**DTC B0017 : PASSENGER DEPLOYMENT LOOP OPEN****Circuit Description**

When ignition is first turned on, Sensing and Diagnostic Module (SDM) performs tests to diagnose critical internal malfunctions. SDM then performs test on deployment loop to check for continuity and shorts to ground or voltage.

**Conditions For Setting DTC**

DTC will set if SDM detects deployment loop resistance is more than 4.8 ohms for 500 milliseconds or when voltage in high-side deployment loop circuits is less than 2.4 volts and deployment loop resistance is 6 ohms or more for 500 milliseconds.

**Action Taken**

SDM turns on AIR BAG warning light and sets DTC.

**Conditions For Clearing DTC**

Current DTC clears when condition responsible for setting DTC no longer exists and a CLEAR DTCs command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

**Diagnostic Aids**

Condition could be caused by an open or high resistance in circuits 1403 or 1404.

**NOTE:** **For circuit number and wire color identification, see WIRING DIAGRAMS .**

**Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Turn ignition off. Disconnect passenger-side air bag module Yellow 2-pin connector located above right-side of instrument panel. See **Fig. 3** . If connector is damaged or corroded, go to next step. If connector is okay, go to step 4 .
3. If harness side of connector is damaged, replace connector. See **WIRE REPAIR** . Go

to step 14 . If passenger-side air bag connector is damaged, replace passenger-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 14 .

4. Reconnect passenger-side air bag module Yellow 2-pin connector. Ensure Connector Position Assurance (CPA) clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0017 is retrieved, go to next step. If DTC B0017 is not retrieved, go to **DIAGNOSTIC AIDS** .
5. Turn ignition off. Disconnect passenger-side air bag module Yellow 2-pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) using Load Tool Adapter (J38715-100) to harness connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0017 is retrieved, go to step 7 . If DTC B0017 is not retrieved, go to next step.
6. Turn ignition off. Replace passenger-side air bag. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 14 .
7. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) and Load Tool Adapter (J38715-100) from harness connector. Disconnect SDM harness connector. If connector shows signs of corrosion, poor connections or damage, go to step 12 . If connector is okay, go to next step.
8. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure continuity between SDM harness connector terminal A3 and passenger-side air bag harness connector terminal "A". Press MIN MAX button on DMM. Connect DMM leads to appropriate terminals. If low or no resistance is not indicated, go to next step. If low or no resistance is indicated, go to step 10 .
9. Repair open or high resistance in circuit 1403. Go to step 14 .
10. Measure continuity between SDM harness connector terminal A8 and passenger-side air bag harness connector terminal "B". Press MIN MAX button on DMM. Connect DMM leads to appropriate terminals. If low or no resistance is not indicated, go to next step. If low or no resistance is indicated, go to step 13 .
11. Repair open or high resistance in circuit 1404. Go to step 14 .
12. Replace SDM connector. See **WIRE REPAIR** . Go to step 14 .
13. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
14. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

#### DTC B0018 : PASSENGER DEPLOYMENT LOOP VOLTAGE OUT OF RANGE

##### Circuit Description

When ignition is first turned on, Sensing and Diagnostic Module (SDM) performs tests to diagnose critical internal malfunctions. SDM then performs test on deployment loop to check for continuity and shorts to ground or voltage.

**Conditions For Setting DTC**

DTC will set if SDM detects voltage at passenger-side air bag module deployment loop high-side circuit is more than 6 volts for 500 milliseconds or when high-side voltage is less than 2.4 volts and deployment loop resistance is less than 6 ohms for 500 milliseconds.

**Action Taken**

SDM turns on AIR BAG warning light, sets DTC and disables deployment loop resistance test.

**Conditions For Clearing DTC**

Current DTC clears when condition responsible for setting DTC no longer exists and a CLEAR DTCs command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

**Diagnostic Aids**

Condition could be caused by a short to voltage or ground in circuits 1403 or 1404.

**NOTE:** For circuit number and wire color identification, see **WIRING DIAGRAMS**.

**Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK**.
2. Turn ignition off. Disconnect passenger-side air bag module Yellow 2-pin connector located above right-side of instrument panel. See **Fig. 3**. If connector is damaged or corroded, go to next step. If connector is okay, go to step 4.
3. If harness side of connector is damaged, replace connector. See **WIRE REPAIR**. Go to step 18. If passenger-side air bag connector is damaged, replace passenger-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 18.
4. Reconnect passenger-side air bag module Yellow 2-pin connector. Ensure Connector Position Assurance (CPA) clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0018 is retrieved, go to next step. If DTC B0018 is not retrieved, go to **DIAGNOSTIC AIDS**.
5. Turn ignition off. Disconnect passenger-side air bag module Yellow 2-pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) using Load Tool Adapter (J38715-100) to harness connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0018 is retrieved, go to step 7. If DTC B0018 is not retrieved, go to next step.
6. Turn ignition off. Replace passenger-side air bag module. See **AIR BAG MODULES**.

under REMOVAL & INSTALLATION. Go to step 18 .

7. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) and Load Tool Adapter (J38715-100) from harness connector. Disconnect SDM harness connector. If connector shows signs of corrosion, poor connections or damage, go to step 16 . If connector is okay, go to next step.
8. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure resistance between SDM harness connector terminal A3 and ground. If resistance is not infinite, go to next step. If resistance is infinite, go to step 10 .
9. Repair short to ground in circuit 1403. See **WIRE REPAIR** . Go to step 18 .
10. Measure resistance between SDM harness connector terminal A8 and ground. If resistance is not infinite, go to next step. If resistance is infinite, go to step 12 .
11. Repair short to ground in circuit 1404. See **WIRE REPAIR** . Go to step 18 .
12. Turn ignition on. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure voltage between SDM harness connector terminal A3 and ground. If voltage is one volt or more, go to next step. If voltage is less than one volt, go to step 14 .
13. Repair short to voltage in circuit 1403. See **WIRE REPAIR** . Go to step 18 .
14. Measure voltage between SDM harness connector terminal A8 and ground. If voltage is one volt or more, go to next step. If voltage is less than one volt, go to step 17 .
15. Repair short to voltage in circuit 1404. See **WIRE REPAIR** . Go to step 18 .
16. Replace SDM connector. See **WIRE REPAIR** . Go to step 18 .
17. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
18. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

#### **DTC B0022 : DRIVER DEPLOYMENT LOOP RESISTANCE LOW**

##### **Circuit Description**

When ignition is first turned on, Sensing and Diagnostic Module (SDM) performs tests to diagnose critical internal malfunctions. SDM then performs test on deployment loop to check for continuity and shorts to ground or voltage.

##### **Conditions For Setting DTC**

DTC will set if driver-side air bag module deployment loop resistance is less than 1.3 ohms for 500 milliseconds.

##### **Action Taken**

SDM turns on AIR BAG warning light and sets DTC.

**Conditions For Clearing DTC**

Current DTC clears when condition responsible for setting DTC no longer exists and a CLEAR DTCs command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

**Diagnostic Aids**

Condition could be caused by a short between circuits 347 and 348. A malfunctioning shorting bar on driver-side air bag or SIR coil connectors could also cause condition.

**NOTE:** **For circuit number and wire color identification, see WIRING DIAGRAMS .**

**Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Turn ignition off. Disconnect driver-side air bag module Yellow 2-pin connector located at base of steering column. See **Fig. 2** . If connector is damaged or corroded, go to next step. If connector is okay, go to step 4 .
3. If harness side of connector is damaged, replace connector. See **WIRE REPAIR** . Go to step 12 . If SIR coil side of connector is damaged, replace SIR coil. See **SIR COIL ASSEMBLY** under REMOVAL & INSTALLATION. Go to step 12 .
4. Reconnect driver-side air bag module Yellow 2-pin connector. Ensure Connector Position Assurance (CPA) clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0022 is retrieved, go to next step. If DTC B0022 is not retrieved, go to **DIAGNOSTIC AIDS** .
5. Turn ignition off. Disconnect driver-side air bag module Yellow 2-pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) using Load Tool Adapter (J38715-100) to harness connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0022 is retrieved, go to step 9 . If DTC B0022 is not retrieved, go to next step.
6. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) and Load Tool Adapter (J38715-100) from harness connector. Reconnect driver-side air bag module Yellow 2-pin connector. Remove driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Connect SIR Driver-Passenger Load Tool (J-38715-A) using Load Tool Adapter (J-38715-30A) to SIR coil-to-air bag module connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0022 is retrieved, go to step 8 . If DTC B0022 is not retrieved, go to next step.
7. Turn ignition off. Replace driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 12 .
8. Turn ignition off. Replace SIR coil. See **SIR COIL ASSEMBLY** under REMOVAL &

INSTALLATION. Go to step 12 .

9. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) and Load Tool Adapter (J-38715-100) from SIR coil-to-air bag module connector. Disconnect SDM connector. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure resistance between SDM harness connector terminals A6 and A7. See [Fig. 11](#) . If resistance is not infinite, go to next step. If resistance is infinite, go to step 11 .
10. Repair short between circuits 347 and 348. See [WIRE REPAIR](#) . Go to step 12 .
11. Replace SDM. See [SENSING & DIAGNOSTIC MODULE \(SDM\)](#) under REMOVAL & INSTALLATION. Go to next step.
12. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to [SIR DIAGNOSTIC SYSTEM CHECK](#) .

#### **DTC B0024 : DRIVER DEPLOYMENT LOOP VOLTAGE OUT OF RANGE**

##### **Circuit Description**

When ignition is first turned on, Sensing and Diagnostic Module (SDM) performs tests to diagnose critical internal malfunctions. SDM then performs test on deployment loop to check for continuity and shorts to ground or voltage.

##### **Conditions For Setting DTC**

DTC will set if SDM detects voltage in driver-side air bag deployment loop high-side circuit is greater than 6 volts for 500 milliseconds or when high-side voltage is less than 2.4 volts and deployment loop resistance is less than 6 ohms for 500 milliseconds.

##### **Action Taken**

SDM turns on AIR BAG warning light and sets DTC.

##### **Conditions For Clearing DTC**

Current DTC clears CLEAR DTCs command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

##### **Diagnostic Aids**

Condition could be caused by a short to ground or voltage in circuits 347 or 348.

**NOTE:** For circuit number and wire color identification, see [WIRING DIAGRAMS](#) .

##### **Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to [SIR DIAGNOSTIC SYSTEM CHECK](#) .

2. Turn ignition off. Disconnect driver-side air bag module Yellow 2-pin connector located at base of steering column. See **Fig. 2**. If connector is damaged or corroded, go to next step. If connector is okay, go to step 4.
3. If harness side of connector is damaged, replace connector. See **WIRE REPAIR**. Go to step 18. If SIR coil side of connector is damaged, replace SIR coil. See **SIR COIL ASSEMBLY** under REMOVAL & INSTALLATION. Go to step 18.
4. Reconnect driver-side air bag module Yellow 2-pin connector. Ensure Connector Position Assurance (CPA) clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0024 is retrieved, go to next step. If DTC B0024 is not retrieved, go to **DIAGNOSTIC AIDS**.
5. Turn ignition off. Disconnect driver-side air bag module Yellow 2-pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) using Load Tool Adapter (J-38715-100) to harness connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0024 is retrieved, go to step 9. If DTC B0024 is not retrieved, go to next step.
6. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) and Load Tool Adapter (J-38715-100) from harness connector. Reconnect driver-side air bag module Yellow 2-pin connector. Remove driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Connect SIR Driver-Passenger Load Tool (J-38715-A) using Load Tool Adapter (J-38715-30A) to SIR coil-to-air bag module connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0024 is retrieved, go to step 8. If DTC B0024 is not retrieved, go to next step.
7. Turn ignition off. Replace driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 18.
8. Turn ignition off. Replace SIR coil. See **SIR COIL ASSEMBLY** under REMOVAL & INSTALLATION. Go to step 18.
9. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) and Load Tool Adapter (J-38715-100) from SIR coil-to-air bag module connector. Disconnect SDM connector. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure resistance between SDM harness connector terminal A6 and ground. If resistance is not infinite, go to next step. If resistance is infinite, go to step 11.
10. Repair short to ground in circuit 347. See **WIRE REPAIR**. Go to step 18.
11. Measure resistance between SDM harness connector terminal A7 and ground. If resistance is not infinite, go to next step. If resistance is infinite, go to step 13.
12. Repair short to ground in circuit 348. See **WIRE REPAIR**. Go to step 18.
13. Turn ignition on. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure voltage between SDM harness connector terminal A6 and ground. If voltage is one volt or more, go to next step. If voltage is less than one volt, go to step 15.
14. Repair short to voltage in circuit 347. See **WIRE REPAIR**. Go to step 18.
15. Measure voltage between SDM harness connector terminal A7 and ground. If voltage is

one volt or more, go to next step. If voltage is less than one volt, go to step 17 .

16. Repair short to ground in circuit 348. See **WIRE REPAIR** . Go to step 18 .
17. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
18. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

#### DTC B0026 : DRIVER DEPLOYMENT LOOP OPEN

##### Circuit Description

When ignition is first turned on, Sensing and Diagnostic Module (SDM) performs tests to diagnose critical internal malfunctions. SDM then performs test on deployment loop to check for continuity and shorts to ground or voltage.

##### Conditions For Setting DTC

DTC will set when SDM detects driver-side air bag module deployment loop resistance is greater than 4.8 ohms for 500 milliseconds or when voltage in high-side circuit is less than 2.4 volts and resistance is 6 ohms or more for 500 milliseconds.

##### Action Taken

SDM turns on AIR BAG warning light and sets DTC.

##### Conditions For Clearing DTC

Current DTC clears when CLEAR DTCs command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

##### Diagnostic Aids

Condition could be caused by an open or high resistance in circuits 347 or 348.

**NOTE:** For circuit number and wire color identification, see **WIRING DIAGRAMS** .

##### Diagnostic Procedure

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .
2. Turn ignition off. Disconnect driver-side air bag module Yellow 2-pin connector located at base of steering column. See **Fig. 2** . If connector is damaged or corroded, go to next step. If connector is okay, go to step 4 .
3. If harness side of connector is damaged, replace connector. See **WIRE REPAIR** . Go to step 16 . If SIR coil side of connector is damaged, replace SIR coil. See **SIR COIL** .

**ASSEMBLY** under REMOVAL & INSTALLATION. Go to step 16 .

4. Reconnect driver-side air bag module Yellow 2-pin connector. Ensure Connector Position Assurance (CPA) clip is installed correctly. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0026 is retrieved, go to next step. If DTC B0026 is not retrieved, go to **DIAGNOSTIC AIDS** .
5. Turn ignition off. Disconnect driver-side air bag module Yellow 2-pin connector. Install SIR Driver-Passenger Load Tool (J-38715-A) using Load Tool Adapter (J-38715-100) to harness connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0026 is retrieved, go to step 9 . If DTC B0026 is not retrieved, go to next step.
6. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) and Load Tool Adapter (J-38715-100) from harness connector. Reconnect driver-side air bag module Yellow 2-pin connector. Remove driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Connect SIR Driver-Passenger Load Tool (J-38715-A) using Load Tool Adapter (J-38715-30A) to SIR coil-to-air bag module connector. Turn ignition on. Using scan tool, check for SIR DTCs. If DTC B0026 is retrieved, go to step 8 . If DTC B0026 is not retrieved, go to next step.
7. Turn ignition off. Replace driver-side air bag module. See **AIR BAG MODULES** under REMOVAL & INSTALLATION. Go to step 16 .
8. Turn ignition off. Replace SIR coil. See **SIR COIL ASSEMBLY** under REMOVAL & INSTALLATION. Go to step 16 .
9. Turn ignition off. Remove SIR Driver-Passenger Load Tool (J-38715-A) and Load Tool Adapter (J-38715-100) from SIR coil-to-air bag module connector. Disconnect SDM connector. If SDM connector shows signs of corrosion, poor connections or damage, go to step 14 . If connector is okay, go to next step.
10. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure resistance between SDM harness connector terminal A6 and driver-side air bag module harness connector terminal "A". If resistance is more than 0.5 ohm, go to next step. If resistance is 0.5 ohms or less, go to step 12 .
11. Repair open or high resistance in circuit 347. See **WIRE REPAIR** . Go to step 16 .
12. Measure resistance between SDM harness connector terminal A7 and driver-side air bag module harness connector terminal "B". If resistance is more than 0.5 ohms, go to next step. If resistance is 0.5 ohms or less, go to step 15 .
13. Repair open or high resistance in circuit 348. See **WIRE REPAIR** . Go to step 16 .
14. Replace SDM connector. See **WIRE REPAIR** . Go to step 16 .
15. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
16. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

**Circuit Description**

Sensing and Diagnostic Module (SDM) monitors front end discriminating sensor circuit for front impact detection. SDM processes signal provided by front end discriminating sensor to further support deployment of air bags. Front end discriminating sensor is an input only device to SDM and does not directly trigger air bag deployment.

**Conditions For Setting DTC**

DTC sets when SDM detects voltage at discriminating sensor signal input is 0.5 volts or less for 500 milliseconds.

**Action Taken**

SDM sets DTC, turns on AIR BAG warning light and disables discriminating sensor input.

**Conditions For Clearing DTC**

DTC clears when voltage at discriminating sensor signal input is greater than 0.5 volts for 500 milliseconds and a CLEAR CODES command is issued via scan tool. History DTC clears once 255 malfunction-free ignition cycles have occurred.

**Diagnostic Aids**

Condition could be caused by a broken or chafed wire in front end discriminating sensor circuits.

**NOTE:** For circuit number and wire color identification, see [WIRING DIAGRAMS](#).

**Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to [SIR DIAGNOSTIC SYSTEM CHECK](#).
2. Turn ignition off. Disconnect right front end discriminating sensor. See [Fig. 7](#). Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure resistance between sensor terminals "A" and "B". See [Fig. 14](#). If resistance is greater than 950 ohms, go to next step. If resistance is 950 ohms or less, go to step 7.
3. Disconnect SDM harness connector. Measure resistance between right front end discriminating sensor harness connector terminal "A" and ground. If resistance is less than infinite, go to next step. If resistance is infinite, go to [SIR DIAGNOSTIC SYSTEM CHECK](#).
4. Disconnect in-line C109 connector. Measure resistance between in-line connector C109 terminal "A" and ground. See [Fig. 16](#). If resistance is less than infinite, go to next step. If resistance is infinite, go to step 6.

5. Repair short to ground in circuit 2160 between in-line connector C109 and sensor connector. Go to step 8 .
6. Repair short to ground in circuit 2160 between in-line connector C109 and SDM connector. Go to step 8 .
7. Replace right front end discriminating sensor. See **FRONT END DISCRIMINATING SENSORS** under REMOVAL & INSTALLATION. Go to next step.
8. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

**DTC B0036 : DISCRIMINATING SENSOR OPEN OR SHORT TO VOLTAGE****Circuit Description**

Sensing and Diagnostic Module (SDM) monitors front end discriminating sensor circuit for front impact detection. SDM processes signal provided by front end discriminating sensor to further support deployment of air bags. Front end discriminating sensor is an input only device to SDM and does not directly trigger air bag deployment.

**Conditions For Setting DTC**

DTC sets when SDM detects voltage at discriminating sensor signal input circuit is greater than 3.65 volts for 500 milliseconds.

**Action Taken**

SDM sets DTC and turns on AIR BAG warning light.

**Conditions For Clearing DTC**

Current DTC clears when voltage at front end discriminating sensor signal input is less than 3.65 volts for 500 milliseconds and CLEAR CODES command is issued via scan tool. History DTC clears once 255 malfunction-free ignition cycles have occurred.

**Diagnostic Aids**

Condition could be caused by a broken or chafed wire in front end discriminating sensor circuits.

**NOTE:**      **For circuit number and wire color identification, see WIRING DIAGRAMS .**

**Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK** .

2. Turn ignition off. Disconnect right front end discriminating sensor. See [Fig. 7](#). Check for proper connection at sensor harness connector terminals "A" and "B". See [Fig. 14](#). If terminals are damaged, corroded or show signs of poor connections, go to next step. If terminals are okay, go to step 4 .
3. Replace sensor harness connector. See [WIRE REPAIR](#) . Go to step 25 .
4. Check discriminating sensor terminals "A" and "B". See [Fig. 14](#) . If terminals are damaged, corroded or show signs of poor connections, go to step 24 . If terminals are okay, go to next step.
5. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure resistance between sensor terminals "A" and "B". See [Fig. 14](#) . If resistance is greater than 1050 ohms, go to step 24 . If resistance is 1050 ohms or less, go to next step.
6. Measure resistance between sensor harness connector terminal "B" and ground. See [Fig. 14](#) . If resistance is 0-5 ohms, go to step 12 . If resistance is greater than 5 ohms, go to next step.
7. Disconnect in-line connector C109, located in harness between left front end discriminating sensor and SDM. Inspect C109 terminals for damage or corrosion. If terminals are damaged or corroded, go to next step. If terminals are okay, go to step 9 .
8. Replace in-line connector C109. See [WIRE REPAIR](#) . Go to step 25 .
9. Measure resistance between right front end discriminating sensor connector terminal "B" and in-line connector C109 terminal "B". See [Fig. 14](#) and [Fig. 16](#) . If resistance is 0-5 ohms, go to next step. If resistance is greater than 5 ohms, go to step 11 .
10. Repair open in circuit 2151 between in-line connector C109 and SDM connector. See [WIRE REPAIR](#) . Go to step 25 .
11. Repair open in circuit 2151 between in-line connector C109 and left front end discriminating sensor connector. See [WIRE REPAIR](#) . Go to step 25 .
12. Disconnect SDM. Inspect SDM connector terminal A11. See [Fig. 11](#) . If terminal is damaged or corroded, go to next step. If terminal is okay, go to step 14 .
13. Replace SDM connector. See [WIRE REPAIR](#) . Go to step 25 .
14. If any SDM connector terminals show signs of corrosion, damage or poor connections, go to step 23 . If terminals are okay, go to next step.
15. Measure resistance between SDM connector terminal A11 and right frond-end discriminating sensor connector terminal "A". See [Fig. 11 & Fig. 14](#) . If resistance is 0-5 ohms, go to step 21 . If resistance is greater than 5 ohms, go to next step.
16. Disconnect in-line connector C109. Inspect terminals for damage or corrosion. If terminals are damaged or corroded, go to next step. If terminals are okay, go to step 18 .
17. Replace in-line connector C109. See [WIRE REPAIR](#) . Go to step 25 .
18. Measure resistance between right front end discriminating sensor connector terminal "A" and in-line connector C109 terminal "A". See [Fig. 14 & Fig. 16](#) . If resistance is 0-5 ohms, go to next step. If resistance is greater than 5 ohms, go to step 20 .

19. Repair open in circuit 2160 between in-line connector C109 and SDM connector. See **WIRE REPAIR**. Go to step 25 .
20. Repair open in circuit 2160 between in-line connector C109 and right front end discriminating sensor connector. See **WIRE REPAIR**. Go to step 25 .
21. Install SIR fuse. Turn ignition on. Measure voltage between right front end discriminating sensor connector terminal "A" and ground. See **Fig. 14** . If voltage is less than one volt, go to **SIR DIAGNOSTIC SYSTEM CHECK** . If voltage is one volt or more, go to next step.
22. Turn ignition off. Remove SIR fuse. Repair short to voltage in circuit 2160. See **WIRE REPAIR** . Go to step 25 .
23. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to step 25 .
24. Replace right front end discriminating sensor. See **FRONT END DISCRIMINATING SENSORS** under REMOVAL & INSTALLATION. Go to next step.
25. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

## DTC B0051 : DEPLOYMENT COMMANDED

### Circuit Description

Sensing and Diagnostic Module (SDM) contains a sensing device which converts vehicle velocity changes to an electrical signal. Electrical signal is processed by SDM and compared to a value stored in memory. When signal exceeds stored value, additional signal processing is performed and signals are compared to values stored in memory. When 2 signals exceed stored values, SDM causes current to flow through air bag modules, deploying air bags and causing DTC B0051 to set. DTC B0051 will set when SDM commands a deployment with no circuit faults present.

### Conditions For Setting DTC

DTC sets when SDM detects a frontal crash, up to 30 degrees off centerline of vehicle, of sufficient force to warrant deployment of air bags.

### Action Taken

SDM sets DTC, turns on AIR BAG warning light and records crash data.

### Conditions For Clearing DTC

DTC B0051 is a latched code and cannot be cleared. Replace SDM only after completing diagnostic procedure.

**NOTE:** For circuit number and wire color identification, see **WIRING DIAGRAMS**.

#### **Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK**.
2. Turn ignition off. If air bags have deployed, go to step 5 . If air bags have not deployed, go to next step.
3. Inspect front of vehicle and undercarriage for signs of impact. If impact has occurred, go to step 5 . If no impact has occurred, go to next step.
4. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to step 6 .
5. Replace components and perform inspections as required following an accident. See **POST-COLLISION INSPECTION**.
6. Reconnect all SIR components. Ensure that all components are properly mounted. Go to **SIR DIAGNOSTIC SYSTEM CHECK**.

#### **DTC B0053 : DEPLOYMENT COMMANDED WITH LOOP MALFUNCTION**

##### **Circuit Description**

Sensing and Diagnostic Module (SDM) contains a sensing device which converts vehicle velocity changes to an electrical signal. Electrical signal is processed by SDM and compared to a value stored in memory. When signal exceeds stored value, additional signal processing is performed and signals are compared to values stored in memory. When 2 signals exceed stored values, SDM will cause current to flow through air bag modules, deploying air bags. DTC B0053 will set instead of DTC B0051 when a deployment occurs while an inflator circuit fault exists that could result in a non-deployment situation in one or both air bag modules.

##### **Conditions For Setting DTC**

DTC sets when SDM detects a frontal crash, up to 30 degrees off centerline of vehicle, of sufficient force to warrant deployment of air bags.

##### **Action Taken**

SDM sets DTC B0053, turns on AIR BAG warning light and records crash data.

##### **Conditions For Clearing DTC**

DTC B0053 is a latched code and cannot be cleared. Replace SDM only after completing diagnostic procedure.

**Diagnostic Aids**

DTC B0053 will be accompanied by another DTC (other than DTC B0051). Repair malfunction causing other DTCs before replacing SDM.

**NOTE:** For circuit number and wire color identification, see **WIRING DIAGRAMS**.

**Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK**.
2. Turn ignition off. If air bags have deployed, go to step 5 . If air bags have not deployed, go to next step.
3. Inspect front of vehicle and undercarriage for signs of impact. If impact has occurred, go to step 5 . If no impact has occurred, go to next step.
4. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to step 6 .
5. Replace components and perform inspections as required following an accident. See **POST-COLLISION INSPECTION** .
6. Reconnect all SIR components. Ensure that all components are properly mounted. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

**DTC B0090 : PASSENGER-SIDE AIR BAG DISABLE SWITCH VOLTAGE OUT OF RANGE****Circuit Description**

When ignition switch is turned on, Sensing and Diagnostic Module (SDM) performs tests to diagnose critical internal functions. SDM monitors voltage levels at passenger-side air bag module enable and disable switch terminals to determine switch position. SDM then performs continuous tests on air bag module deployment loops.

**Conditions For Setting DTC**

DTC sets when voltage detected at passenger-side air bag disable switch enable and disable terminals are less than one volt when passenger AIR BAG ON indicator is commanded on. DTC will also set when voltage at enable and disable terminals is greater than 4 volts when AIR BAG ON lamp is commanded off, or when voltage at enable and disable terminals is more than one volt when AIR BAG OFF lamp is commanded on.

**Action Taken**

Passenger-side air bag module disable switch is defaulted to a calibrated state. SDM turns on AIR BAG warning light.

**Conditions For Clearing DTC**

DTC clears when passenger-side air bag disable switch light is off and voltage at disable and enable terminals are in opposite states for 500 milliseconds and a CLEAR CODES command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

**Diagnostic Aids**

Condition could be caused by a short between passenger-side air bag module disable switch enable and disable circuits.

**NOTE:** For circuit number and wire color identification, see **WIRING DIAGRAMS**.

**Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK**.
2. Turn ignition off. Turn passenger-side air bag module disable switch to ON position. Turn ignition on. If AIR BAG ON light comes on, go to step 10 . If AIR BAG ON light does not come on, go to next step.
3. Turn ignition off. Remove passenger-side air bag module disable switch. See **PASSENGER-SIDE AIR BAG MODULE DISABLE SWITCH** under REMOVAL & INSTALLATION. If wire connector shows signs of corrosion, poor connections or damage, go to next step. If connector is okay, go to step 5 .
4. Replace switch connector. See **WIRE REPAIR** . Go to step 33 .
5. Inspect disable switch terminals. If connector terminals are damaged or corroded, go to step 32 . If connector terminals are okay, go to next step.
6. Disable SIR system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure resistance between ground and disable switch Yellow 6-pin connector terminal "F". See **Fig. 17** . If resistance is 5 ohms or less, go to step 8 . If resistance is greater than 5 ohms, go to next step.
7. Repair high resistance or open in disable switch ground circuit. Go to step 33 .
8. Measure voltage between ground and disable switch connector terminal "B". See **Fig. 17** . If voltage is one volt or less, go to next step. If voltage is greater than one volt, go to step 10 .
9. Turn ignition off. Repair high resistance or open in disable switch power feed circuit. Go to step 33 .
10. Turn ignition off. Connect scan tool to Data Link Connector (DLC), located under left side of instrument panel. Turn disable switch to ON position. Turn ignition on. Request SIR data list display. If PASS AIR BAG IP is enabled, go to step 20 . If PASS AIR

BAG IP is not enabled, go to next step.

11. Turn ignition off. Remove SIR fuse. Disconnect SDM connector. If terminals are corroded, damaged or show signs of poor connections, go to step 21 . If connector is okay, go to next step.
12. Measure resistance between SDM connector terminal A10 and disable switch Yellow 6-pin connector terminal "A". See **Fig. 11 & Fig. 17** . If resistance is 5 ohms or less, go to step 14 . If resistance is greater than 5 ohms, go to next step.
13. Repair high resistance or open in disable switch signal circuit. See **WIRE REPAIR** . Go to step 33 .
14. Measure resistance between disable switch Yellow 6-pin connector terminal "A" and ground. See **Fig. 17** . If resistance is infinite, go to step 16 . If resistance is less than infinite, go to next step.
15. Repair short to ground in disable switch signal circuit. See **WIRE REPAIR** . Go to step 33 .
16. Connect disable switch connector. Install SIR fuse. Turn ignition on. Turn disable switch to OFF position. Measure voltage between disable switch Yellow 6-pin connector terminal "A" and ground. See **Fig. 17** . If voltage is greater than one volt, go to next step. If voltage is one volt or less, go to step 18 .
17. Turn the ignition off. Repair short to voltage in disable switch circuit. See **WIRE REPAIR** . Go to step 33 .
18. Turn ignition off. Measure resistance between disable switch Yellow 6-pin connector terminals "A" and "E". See **Fig. 17** . If resistance is infinite, go to step 32 . If resistance is less than infinite, go to next step.
19. Repair short between circuits 353 and 371. See **WIRE REPAIR** . Go to step 33 .
20. Turn ignition off. Disable SIR system. See **DISABLING & ACTIVATING AIR BAG SYSTEM** . Disconnect SDM connector. If SDM connector shows signs of corrosion, poor connections or damage, go to next step. If connector is okay, go to step 22 .
21. Replace SDM connector. See **WIRE REPAIR** . Go to step 33 .
22. Disconnect disable switch Yellow 6-pin connector. If connector terminals show signs of corrosion, poor connections or damage, go to next step. If connector terminals are okay, go to step 24 .
23. Replace disable switch Yellow 6-pin connector. See **WIRE REPAIR** . Go to step 33 .
24. Measure voltage between disable switch Yellow 6-pin connector terminals "E" and ground. See **Fig. 17** . If voltage is one volt or less, go to step 26 . If voltage is greater than one volt, go to next step.
25. Turn ignition off. Repair short to voltage in circuit 353. See **WIRE REPAIR** . Go to step 33 .
26. Measure voltage between disable switch Yellow 6-pin connector terminals "A" and ground. See **Fig. 17** . If voltage is one volt or less, go to step 28 . If voltage is greater

- than one volt, go to next step.
27. Turn the ignition off. Repair short to voltage in circuit 371. Go to step 33 .
  28. Turn ignition off. Measure resistance between disable switch Yellow 6-pin connector terminal "E" and SDM connector terminal A12. See [Fig. 11](#) & [Fig. 17](#) . If resistance is 5 ohms or less, go to step 30 . If resistance is greater than 5 ohms, go to next step.
  29. Repair high resistance or open in circuit 353. See [WIRE REPAIR](#) . Go to step 33 .
  30. Measure resistance between disable switch Yellow 6-pin connector terminals "E" and "F". See [Fig. 17](#) . If resistance is infinite, go to step 32 . If resistance is not infinite, go to next step.
  31. Repair short to ground in circuit 353. See [WIRE REPAIR](#) . Go to step 33 .
  32. Replace passenger-side air bag module disable switch. See [PASSENGER-SIDE AIR BAG MODULE DISABLE SWITCH](#) under REMOVAL & INSTALLATION. Go to next step.
  33. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all SIR DTCs. Go to [SIR DIAGNOSTIC SYSTEM CHECK](#) .

#### DTC B0091 : PASSENGER-SIDE AIR BAG DISABLE SWITCH WRONG STATE

##### Circuit Description

When ignition switch is turned on, Sensing and Diagnostic Module (SDM) performs tests to diagnose critical internal functions. SDM monitors voltage levels at passenger-side air bag module enable and disable switch terminals to determine switch position. SDM then performs continuous tests on air bag module deployment loops.

##### Conditions For Setting DTC

DTC sets when voltage at passenger-side air bag module disable switch enable circuit is low with AIR BAG ON lamp illuminated and disable circuit is low.

##### Action Taken

SDM defaults passenger-side air bag module disable switch to calibrated state, AIR BAG warning light is turned on and SDM toggles AIR BAG ON-OFF lamp every 5 seconds.

##### Conditions For Clearing DTC

Current DTC clears when disable switch AIR BAG ON lamp is illuminated with voltage at enable and disable terminals low for 500 milliseconds and CLEAR CODES command is issued via scan tool. History DTC will clear once 255 malfunction free ignition cycles have occurred.

##### Diagnostic Aids

Condition can be caused by a short between circuits 371 and 353.

**NOTE:** For circuit number and wire color identification, see [WIRING DIAGRAMS](#).

#### Diagnostic Procedure

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to [SIR DIAGNOSTIC SYSTEM CHECK](#).
2. Connect scan tool to Data Link Connector (DLC), located under left side of instrument panel. Turn ignition on. Observe PASS AIR BAG IP data parameter. If scan tool indicates that switch is in disable position, go to next step. If switch is not disabled, go to step 4.
3. Turn passenger-side air bag module disable switch to ON position. If PASS AIR BAG IP parameter changes state, go to next step. If PASS AIR BAG IP parameter does not change state, go to [DIAGNOSTIC AIDS](#).
4. Turn ignition off. Disconnect passenger-side air bag module disable switch harness Yellow 6-pin connector. Turn ignition on. Observe PASS AIR BAG IP data parameter. If scan tool indicates PASS AIR BAG IP is disabled, go to step 7. If PASS AIR BAG IP is not disabled, go to next step.
5. Turn ignition off. Disconnect SDM and disable switch connectors. Using Digital Multimeter (J-39200) with Test Adapter Kit (J-35616-A), measure resistance between terminals A9 and A10 at SDM connector. If resistance is infinite, go to next step. If resistance is not infinite, repair short between circuits 371 and 353. See [WIRE REPAIR](#). Go to step 10.
6. Inspect SDM connector for signs of corrosion, poor connections or damage. Replace connector if damaged. See [WIRE REPAIR](#). Go to step 10. If connector is okay, go to step 8.
7. Inspect disable switch connector for signs of corrosion, poor connections or damage. Replace connector if damaged. See [WIRE REPAIR](#). Go to step 10. If connector is okay, go to step 9.
8. Replace SDM. See [SENSING & DIAGNOSTIC MODULE \(SDM\)](#) under REMOVAL & INSTALLATION. Go to step 10.
9. Replace passenger-side air bag module disable switch. See [PASSENGER-SIDE AIR BAG MODULE DISABLE SWITCH](#) under REMOVAL & INSTALLATION. Go to next step.
10. Reconnect all SIR components. Ensure that all components are properly mounted. Clear all DTCs. Go to [SIR DIAGNOSTIC SYSTEM CHECK](#).

#### DTC B1000 : SDM MALFUNCTION

##### Circuit Description

An internal fault detection is handled inside Sensing and Diagnostic Module (SDM). No external circuits are involved.

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### Conditions For Setting DTC

Microprocessor runs program to detect internal faults in SDM. Voltage and ground are only requirements for running program. Program will run even if voltage is out of valid operating range.

### Action Taken

SDM refuses all additional inputs.

### Conditions For Clearing DTC

DTC clears when microprocessor makes successful write to Electronically Erasable Programmable Read Only Memory (EEPROM) and check sum maneuver.

### Diagnostic Aids

DTC may be stored as a history code without affecting operation of SDM. If DTC is stored only as a history code, and not retrieved as a current code, do not replace SDM. IF DTC is retrieved as a current and history code, replace SDM.

### Diagnostic Procedure

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK**.
2. If DTC is retrieved as both a history and current DTC, go to next step. If DTC is not retrieved as both a history and current DTC, go to **DIAGNOSTIC AIDS**.
3. Turn ignition off. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Reconnect all SIR components. Ensure that all components are properly mounted. Go to **SIR DIAGNOSTIC SYSTEM CHECK**.

## DTC B1001 : OPTION CONFIGURATION ERROR

### Circuit Description

When ignition is turned on, Sensing and Diagnostic Module (SDM) compares restraints identification stored in SDM with restraints identification stored in Body Control Module (BCM). SDM then compares Vehicle Identification Number (VIN) stored in SDM to VIN stored in BCM.

### Conditions For Setting DTC

DTC sets when IGNITION POSITIVE voltage is within normal operating range and restraints identification and-or VINs do not match in BCM and SDM.

### Action Taken

SDM sets DTC, turns on AIR BAG warning light and disables all air bag deployment.

#### **Conditions For Clearing DTC**

DTC clears when CLEAR DTCs command is issued via scan tool. History DTC will clear when 255 malfunction free ignition cycles have occurred.

#### **Diagnostic Aids**

If BCM or Powertrain Control Module (PCM) were replaced, modules will need to be reprogrammed for proper operation.

#### **Diagnostic Procedure**

1. If SIR diagnostic system check has been performed, go to next step. If SIR diagnostic system check has not been performed, go to **SIR DIAGNOSTIC SYSTEM CHECK**.
2. Install scan tool to Data Link Connector (DLC), located under left side of instrument panel. Using scan tool, verify VIN programmed into PCM matches vehicle VIN. If VINs match, go to step 4 . If VINs do not match, go to next step.
3. Using scan tool, reprogram PCM with correct VIN. Go to step 9 .
4. If BCM was replaced, go to next step. If BCM was not replaced, go to step 6 .
5. Using scan tool, program BCM to learn restraints identification from SDM. Go to step 9 .
6. Compare VIN stored in BCM to VIN stored in PCM. If VINs do not match, go to next step. If VINs match, go to step 8 .
7. Using scan tool, reprogram BCM with correct VIN. Go to step 9 .
8. Turn ignition off. Replace SDM. See **SENSING & DIAGNOSTIC MODULE (SDM)** under REMOVAL & INSTALLATION. Go to next step.
9. Reconnect all SIR components. Ensure that all components are properly mounted. Go to **SIR DIAGNOSTIC SYSTEM CHECK** .

## **WIRE REPAIR**

SIR system requires special wiring repair procedures due to sensitive nature of circuitry. Wire Repair Kit (J-38125-B) contains special sealed splices for use in repairing SIR wiring. Splices use a heat shrink sleeve with sealing adhesive to produce a sealed splice and a cross-hatched core crimp to produce a positive contact for low energy circuits.

Repair damaged SIR wire harness connectors and terminals (except pigtailed) using connector repair assembly packs and splice crimping tool provided. Terminals in SIR system are manufactured from a special metal to provide necessary contact integrity for sensitive, low-energy circuits. These terminals are only available in connector repair assembly packs, and no other terminal should be substituted.

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If individual terminals on SDM harness connector are damaged, SDM harness connector must be replaced using SDM harness connector pigtail assembly or SDM harness connector replacement kit. If individual terminals on any other SIR connector are damaged, entire connector must be replaced. Use appropriate connector repair assembly pack. Replace entire SIR wire harness, if necessary to maintain SIR circuit integrity.

DO NOT make wiring, connector or terminal repairs on components with wiring pigtails. If a wiring pigtail is damaged, entire component (including pigtail) should be replaced.

Any wiring other than a pigtail can be repaired by splicing in a new section of wire of same gauge. Sealed splices and crimping tool must be used for these splices. Open wire harness by removing tape as necessary, using a sewing seam ripper. Refer to instructions in kit for wiring repair procedure.

## TORQUE SPECIFICATIONS

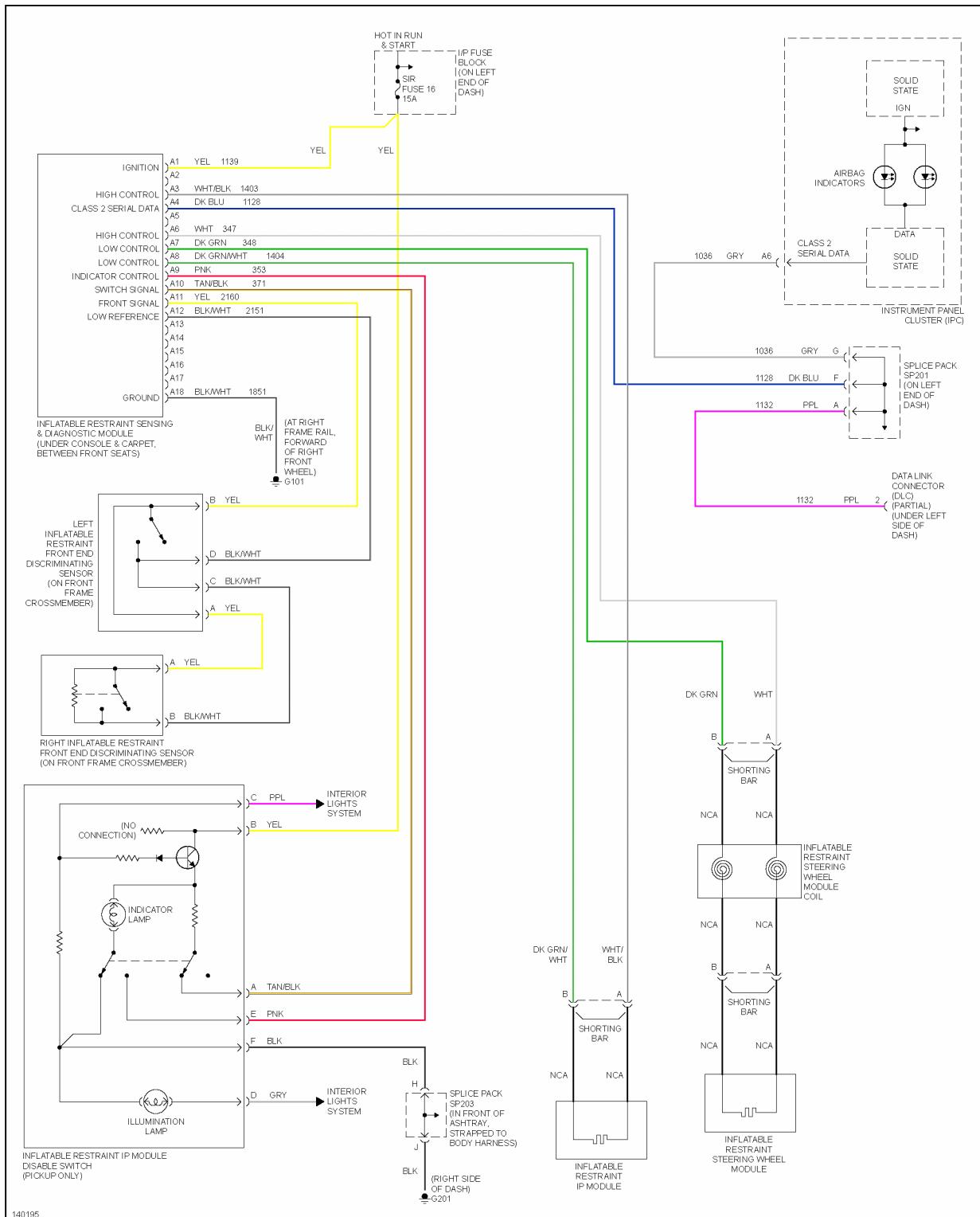
### TORQUE SPECIFICATIONS

Application	Ft. Lbs (N.m)
Steering wheel nut	30 (41)
INCH Lbs. (N.m)	
Passenger-side air bag mounting nuts and bolts	71 (8)
Sensing & Diagnostic Module (SDM) nuts	106 (12)
Steering column upper cover screw	12 (1.4)
Steering column lower cover screws	53 (6)

## WIRING DIAGRAMS

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**Fig. 18: SIR System Wiring Diagrams (Blazer, Bravada, Jimmy, Sonoma & S10)**  
Courtesy of GENERAL MOTORS CORP.